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Intensive thought has been given to the problems of educating children of migrant workers in Texas. A survey was made to determine the number of migrant children, geographical areas affected and patterns of migration. A six month school schedule was evolved, offering 1050 hours of instruction, 8 hours a day for approximately 27 weeks from December to June. Taken into consideration were the facts that 80 to 90% of the migrant children in Texas use little English, that children who remain in the migratory stream are two or more years educationally retarded, and that lengthening of the school day does not insure that the additional time may all be devoted to intensive academic effort. The first priority in subject matter would be the teaching of English. Mathematics would be given the second priority, and social studies the third priority. Attention would be given to experiences designed to extend the oral vocabulary of the children, to emphasize the responsibilities and privileges of citizenship and to instill favorable behavior attitudes. It was recommended that a self-contained classroom organization be followed for the first four years and possibly the fifth year, with departmentalization for grades six, seven, and eight. Schedules of class time, daily and yearly in every subject, grades 1-8 are given. For social studies, science, gym, art, music and industrial arts, a grade or chronological placement is recommended. Industrial arts and homemaking would be taught to students over 13 years of age who had been in school five or more years.

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PROPOSED CURRICULUM PROGRAM

for

TEXAS MIGRATORY CHILDREN

ED0010

Texas Education Agency
October, 1963

PROPOSED CURRICULUM PROGRAM

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PREFACE

Approximately two years ago the members of the State Board of Education and the Commissioner of Education began to give intensive thought to the problems of educating the children of migrant workers in the State of Texas.

On February 10, 1962, R. P. Ward was appointed special consultant to conduct a survey to determine the number of children in this classification, the geographical areas which they occupy, and the patterns of migration which they follow. Mr. Ward visited schools in the home base of migratory children as well as in receiving schools of these children throughout the State and compiled these data.

On January 7, 1963, the State Board of Education approved the appointment of an advisory commission to consider ways to educate migrant children. This committee included the following persons:

B. C. Banks
Superintendent of Schools
Robstown

John F. Barron
Superintendent of Schools
San Benito

A. O. Bird
Superintendent of Schools
Gonzales

R. E. Byrom
Superintendent of Schools
Donna

J. D. Carlisle
Superintendent of Schools
Sinton

S. P. Cowan
Superintendent of Schools
McAllen

Rodolfo A. de la Garza
Superintendent of Schools
Rio Grande City

Harold R. Dooley
Asst. Superintendent of Schools
Edinburg

A. R. Ezell
Superintendent of Schools
Lyford

Berlie J. Fallon
Texas Technological College
Lubbock

Joe C. Hutchinson
Superintendent of Schools
San Marcos

J. I. James
Superintendent of Schools
Eagle Pass

Thad McDonnell
Superintendent of Schools
Levelland

Floyd D. Manry
Superintendent of Schools
Plainview

Thomas S. Pickens
Superintendent of Schools
Edinburg

R. C. Tate
Superintendent of Schools
Crystal City

From the work of this committee have come two suggestions for meeting needs of schools with migrant children:

1. A more liberal migratory pupil formula for allocating additional professional units.

2. A six-month school providing approximately the same amount of time for instruction as provided by the regular nine-month school.

The six-month school is envisioned as one that will offer approximately 1,050 clock hours of instruction. One suggested schedule would be for a term beginning the first Monday in December and continuing through the first Friday in June, with December 24, 25, 26 and Good Friday designated as holidays. Local schools might elect other beginning and ending dates.

The school week would be made up of five 8-hour days, each beginning at 8 a.m. and closing at 5 p.m. The twenty-seven week term would provide 1,052 clock hours of instruction time (as compared with the minimum requirement of 1,050 hours in the regular 9-month program) for children in their third through eighth years in school. It would provide a total of 780 (as compared with the minimum requirement of 788 hours in the regular 9-month program) clock hours of instruction time for children in their first and second years (six hours each day).

An advisory committee, composed of the following elementary principals, supervisors, and teachers from schools in the lower Rio Grande Valley and the upper coastal region, prepared suggestions for a curriculum program designed for a six-month school for migratory children:

Mrs. Frances Gavenda
Elementary Supervisor
McAllen

Mrs. Jessie Morgan
Director, Elementary Education
Pharr

Mrs. Margaret Gilmore
Elementary Supervisor
McAllen

Mrs. Pauline Pace
Elementary Supervisor
San Benito

A. R. Ramirez, Director
Curriculum and Special Services
Edinburg

Powell Baker
Elementary Principal
Robstown

John Hansard
Visiting Teacher
Robstown

E. D. Peek
Elementary Principal
San Benito

Miss Jessie Lewis
Reading Consultant
Corpus Christi

In their planning, this Valley group gave thought to the following considerations:

1. Approximately 80 to 90% of the migrant children in Texas use little English.

2. Children who remain in the migratory stream are two or more years educationally retarded.

3. Lengthening of the school day does not insure that the additional time may all be devoted to intensive academic effort.

On the basis of these considerations, this committee recommended that a nongraded organization of subject matter be planned in language arts and mathematics. They suggested that levels of work in these areas be developed with check points arranged at specific intervals so that students might progress at their individual rates of speed and each move to a new level once an accepted standard of mastery has been achieved. They recommended that student progress be determined by standardized tests selected from those available or tests designed especially for this project.

In social studies, science, physical education, art, music, and industrial arts, a grade or chronological placement of children was proposed. Industrial arts and homemaking would be provided for students age 13 or more years of age who have been in school five or more years.

This committee recommended that a self-contained classroom organization be followed in the first four school years and possibly the fifth year. If teachers specifically qualified in language arts, in mathematics, or in social studies are available, departmentalization was suggested for school years 6, 7, 8, and possibly 5. By their fifth year in school the overage children can derive benefit from contact with more teachers.

The first priority in subject matter would be the teaching of English. Mathematics would be given the second priority, and the third priority would be given to social studies. Attention would be given to experiences designed to extend the oral vocabulary of the children, to emphasis on teaching of the responsibilities and privileges of citizenship, and, in evaluation of student work, to examination of behavior and attitudes.

Five schools from the Rio Grande Valley, San Benito, Weslaco, Edinburg, Pharr-San Juan-Alamo, and McAllen, chose to participate in the pilot project for the 6-month school. On August 20-23 the following representatives from these five schools met in Austin and, with members of the staff of the Texas Education Agency, developed further materials for the program for children of migratory agricultural workers in Texas:

PARTICIPANTS

W. F. Barnes
Director of Curriculum
Weslaco

S. P. Cowan
Superintendent
McAllen

R. S. Evins
Curriculum Specialist
Edinburg

Antonio Garcia
Principal
McAllen

Mrs. Frances Gavenda
Elementary Supervisor
McAllen

Mrs. Margaret Gilmore
Elementary Supervisor
McAllen

Augusto Guerra, Principal
Pharr-San Juan-Alamo

Ralph Guerra
Principal
Weslaco

Jessie Morgan
Director of Elementary Education
Pharr-San Juan-Alamo

D. P. O'Quinn
Superintendent
Weslaco

Pauline Pace
Elementary Supervisor
San Benito

Peek, E. D.
Principal
San Benito

Thomas S. Pickens
Superintendent
Edinburg

A. R. Ramirez
Director of Curriculum
and Special Services
Edinburg

Lucinda Schewitz
Principal
San Benito

J. F. Townley
Superintendent
Pharr-San Juan-Alamo

James Tunnell
Curriculum Director
McAllen

SCHEDULING OF CLASS TIME, DAILY AND YEARLY, SUBJECTS TO BE INCLUDED, GRADES 1-8

GRADE 1, SELF-CONTAINED CLASS

MORNING	Average Minutes Daily	Average Hours Yearly
Oral Language Development Greetings, talks and sings about the flag, directions for work...	30	65
Arithmetic, Steps 1-6* Oral emphasis, language learning, number concepts, arithmetic vocabulary, operations of addition and subtraction, simple measuring experiences...	30	65
English Language Arts Development Level 1** Basic speaking vocabulary, reading readiness activities...	40	87
Physical Education Instruction Non-sport games, rhythmic activities, appraisal...	30	65
Social Studies Home, school, and community--oral-aural-activities approach...	20	43
Health and Safety Food selection, cleanliness, bus safety...	15	33

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*See explanation of Arithmetic Steps, Section on Arithmetic.

**Language Development at appropriate levels and within a workable range of possibly three levels in a single class.

AFTERNOON	Average Minutes Daily		Average Hours Yearly
Rest, Reading aloud by teacher, listens to music...	30		65
Arithmetic, Steps 1-6, alternate days with Music. Arithmetic games, dramatization, oral drill, vocabulary maintenance, measuring activities.	20	20	
Music, alternate days with afternoon Arithmetic. Listening, singing...	20		43
Oral Language Practice Science emphasis, related to the pupil's environment...	30		65
Art Drawing, clay modeling, finger painting...	30		65
Directed Play Toys, dramatization, pets...	30		65
Oral Language Development Children's stories; listening to teacher, tape, or records...	30		65
Excursion Observation and discussion, environment of the school and grounds...	20		43
	355		769

Distribution of Time:			Per cent of Total Time
English Language Arts	160	352	45
Arithmetic	40	87	11
Social Studies	20	43	6.5
Physical Education	30	65	8.5
Art and Music	40	87	11
Health and Safety	15	33	4
Directed Play, Excursion	50	102	14
	355	769	100

GRADE II, SELF-CONTAINED CLASS

MORNING	Average Minutes Daily	Average Hours Yearly
. Oral Language Development Talks and sings about the flag, planning, directions for work...	20	43
. Basal Reading At possibly three levels, direct instruction, group and individual exercises...	75	163
. Arithmetic, Steps 1-10 Number concepts, operations of addition and subtraction, vocabulary, written numerals...	30	65
. Physical Education Instruction Non-sport games, contests, relays, rhythmic activities, appraisal...	25	54
. Social Studies Home, School, Community, continued	20	43
. Health and Safety Food selection and cleanliness Bus and bicycle safety...	15	33
AFTERNOON		
. Basal reading, continued	30	65
. Arithmetic, Steps 1-10 Games, dramatization, discovery, experiences with concrete objects, oral drill, measuring experiences...	20	43
. Music and Art, alternate days Listening, singing, drawing, painting with tempera ...	20	43

AFTERNOON	Average Minutes Daily	Average Hours Yearly
• **Oral Language** Children's stories, listening to teacher, tape, records; some science content from pupil's environment...	25	54
• **Directed Play** Toys, dramatization, pets...	30	65
• **Composition and Mechanics** Dictation of simple stories; short narratives, handwriting, and spelling...	25	54
• **Directed Reading** Supplementary readers, library books or extension of basal reading instruction...	25	54
• **Observation and Excursion** Readiness for earth and life science...	20	43
	380	822

Distribution of Time:			Per Cent of Total Time
• English Language Arts	200	433	52
• Arithmetic	50	108	14
• Social Studies	20	43	5.5
• Physical Education	25	54	6
• Art and Music	20	43	5.5
• Health and Safety	15	33	4.2
• Directed Play	30	65	7.3
• Observation and Excursion	20	43	5.5
	380	822	100

GRADE III, SELF-CONTAINED CLASS

MORNING	Average Minutes Daily	Average Hours Yearly
• **Oral Language Development** **Talks and sings about the flag, planning, directions for work...**	15	33
• **Basal Reading** **At possibly three levels, direct instruction, group and individual exercise...**	70	152
• **Arithmetic, Steps 1-15** **Number concepts, basic operations, vocabulary, problem solving, measurement...**	40	87
• **Physical Education Instruction** **Non-sport games, contests, relays, rhythmic activities, track and field...**	30	65
• **Social Studies** **Basic needs and expanded community...**	30	65
• **Oral Language** **Children's stories, listening to the teacher, tape, records; drills...**	35	76
AFTERNOON		
• **Basal reading continued...**	30	65
• **Arithmetic, Steps 1-15** **Games, dramatization, supervised study, maintenance of skills, charts and puzzles...**	20	43
• **Music** **Listening, singing...**	20	43
• **Science** **Observation--life, earth...**	30	65

AFTERNOON	Average Minutes Daily	Average Hours Yearly
. Physical Education Instruction Non-sport games, contests, relays, rhythmic activities, track and field...	20	43
. Composition and Mechanics Dictation of simple stories, writing of short narratives, handwriting and spelling...	45	98
. Directed Reading Supplementary readers, library books or extension of basal reading instruction...	45	98
. Art Drawing, painting with tempera, modeling with clay...	20	43
. Health and Safety Food selection, cleanliness... Home, bus, school, bicycle, and traffic safety...	30	65
	480	1041

Distribution of Time:			Per Cent of Total Time
. English Language Arts	240	520	46
. Arithmetic	60	130	13
. Social Studies	30	65	9
. Physical Education	50	109	10
. Science	30	65	6
. Health and Safety	30	65	6
. Art and Music	40	87	10
	480	1041	100

GRADE IV, SELF-CONTAINED CLASS

MORNING	Average Minutes Daily	Average Hours Yearly
• Oral Language Development Pledge of allegiance, planning, directions for work...	15	33
• Basal Reading At possibly three levels, direct instruction, group and individual exercises...	60	130
• Arithmetic, Steps 1-21 Numeration, basic operations Fractions, problem solving...	40	87
• Physical Education Instruction Appraisal, basic movements, exercise, non-sport games, contests, relays, gymnastics, volleyball, softball, soccer, rhythmic activities...	25	54
• Social Studies The state: geographic relationships as a unit...	50	109
• Oral Language Children's stories, listening to and emulating the model: teacher, tapes, records...	30	65
• Health and Safety Food selection, personal grooming... Home, school, bicycle, traffic, recreation safety...	20	43
AFTERNOON		
• Directed Reading Supplementary readers, library books...	30	65

AFTERNOON	**Average Minutes Daily**	**Average Hours Yearly**
Arithmetic, Steps 1-21 **Games, supervised study, skills reinforcement, oral drill, charts and puzzles...**	20	43
Music **Listening, singing, introduction to music theory...**	30	65
Science **Observation--life, earth...**	40	87
Physical Education Instruction **Appraisal, basic movements, exercise, non-sport games, contests, relays, gymnastics, volleyball, softball, soccer, rhythmic activities...**	25	54
Composition and Mechanics **Writing of stories, handwriting, spelling, language study...**	45	98
Art and Crafts **Drawing, painting with tempera, modeling with clay. Basketry, papier-maché...**	40	87
	470	1020

Distribution of Time:			**Per Cent of Total Time**
English Language Arts	180	390	38
Arithmetic	60	130	12
Social Studies	50	109	11
Physical Education	50	109	11
Science	40	87	9
Health and Safety	20	43	4
Music, Art, Crafts	70	141	15
	470	1020	100

GRADE V, SELF-CONTAINED CLASS OR DEPARTMENTAL WORK, BLOCKS OF TIME FOR ENGLISH LANGUAGE ARTS

MORNING	Average Minutes Daily	Average Hours Yearly
• English Language Arts Oral language practice, listening to model, basal reading...	90	195
• Music Listening, singing, theory...	30	65
• Arithmetic, Steps 1-27 Basic operations, fractions, simple geometric concepts, problem solving...	45	98
• Physical Education Instruction Appraisal, basic movements, exercise, non-sport games, contests, relays, gymnastics, softball, basketball, touch football, rhythmic activities...	25	54
• Social Studies How man adapts to his environment and makes use of natural resources...	50	109
AFTERNOON		
• English Language Arts Directed reading in supplementary readers and library materials, creative composition, language structure, handwriting, spelling...	90	195
• Arithmetic, Steps 1-27 Games and puzzles, supervised study, drill and skill reinforcement...	30	65

AFTERNOON	Average Minutes Daily	Average Hours Yearly
. *Art and Crafts, Homemaking or Industrial Arts Art and Crafts: drawing, painting with water colors, modeling with clay. Paper crafts, leathercraft, camp crafts...	50	109
. Science and Health General science, physiology...	50	109
. Physical Education Instruction and Safety Appraisal, basic movements, exercise, non-sport games, contests, relays, gymnastics, softball, basketball, touch football, rhythmic activities...	20	43
	480	1042

Distribution of Time:	Average Minutes Daily	Average Hours Yearly	Per Cent of Total Time
. English Language Arts	180	389	38
. Arithmetic	75	163	16
. Social Studies	50	109	10
. Physical Education and Safety	45	98	9
. Music	30	65	7
. Art and Crafts, Homemaking, or Industrial Arts	50	109	10
. Science and Health	50	109	10
	480	1042	100

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*Only those pupils who are 13 years of age or older receive Homemaking (girls) or Industrial Arts (boys). Younger pupils take Art and Crafts.

GRADE VI, SELF-CONTAINED CLASS OR DEPARTMENTAL WORK, BLOCKS OF TIME FOR ENGLISH LANGUAGE ARTS

MORNING	Average Minutes Daily	Average Hours Yearly
• English Language Arts Oral language practice, listening to model, basal reading, Levels 1-16, mechanics, including spelling...	90	195
• Music Listening, singing, theory...	30	65
• Arithmetic, Steps 1-32 Basic operations, fractions and decimals, problem solving...	45	98
• Physical Education Instruction Appraisal, basic movements, exercise, non-sport games, contests, relays,gymnastics, speedball, basketball, rhythmic activities...	25	54
• Social Studies The Nation, its geography Relationship of State and Federal governments. Heritage from England and France. Conservation of Southwest natural resources...	50	109
AFTERNOON		
• English Language Arts Directed reading in supplementary readers and library materials, composition, language structure, handwriting, spelling...	90	195
• Arithmetic, Steps 1-32 Games, supervised study, cross number puzzles, skill reinforcement...	30	65

AFTERNOON	Average Minutes Daily	Average Hours Yearly
*Art and Crafts, Homemaking, or Industrial Arts Art and Crafts: drawing, painting with water colors, modeling with clay. Paper crafts, leathercraft, camp crafts...	50	109
Science and Health General science...	50	109
Physical Education Instruction and Safety Appraisal, basic movements, exercise, non-sport games, contests, relays, gymnastics, speedball, basketball, rhythmic activities...	20	43
	480	1042

Distribution of Time:			Per Cent of Total Time
English Language Arts	180	389	38
Arithmetic	75	163	16
Social Studies	50	109	10
Physical Education and Safety	45	98	9
Music	30	65	7
Art and Crafts, Homemaking, or Industrial Arts	50	109	10
Science and Health	50	109	10
	480	1042	100

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*Only those pupils who are 13 years of age or older receive Homemaking (girls) or Industrial Arts (boys). Younger pupils take Art and Crafts.

GRADES VII & VIII, DEPARTMENTAL WORK
(Recommended Plan)

	Average Minutes Daily	Average Hours Yearly
Subjects Required of All Pupils:		
English Language Arts, Morning Period Basal reading, oral language practice...	90	195
English Language Arts, Afternoon Period Directed reading in supplementary readers, literary anthologies, and library materials; composition, language structure, handwriting, spelling...	90	195
Arithmetic, Morning Period, Steps 1-42 Basic operations and skill maintenance, geometric concepts, scale drawing, problem solving, denominate numbers...	45	98
Arithmetic, Afternoon Period Alternate days with Afternoon Social Studies--drills, supervised study, charts, scale drawing, in formal arithmetic...	22 1/2 ave.	49
Social Studies, Morning Period The Nation; history, geography, American Heritage, citizenship...	45	98
Social Studies, Afternoon Period The Nation--same content as morning period...Alternate days with Afternoon Arithmetic	22 1/2 ave.	49
Physical Education, Health, Safety Appraisal of fitness, conditioning exercises, basketball, touch football, soccer, softball, aquatics, gymnastics, rhythmic activities, track and field, recreational games...	45	98

	Average Minutes Daily	Average Hours Yearly
Science--life, earth, physical	45	98
	405	880
Additional Courses*	45	98
	45	98
	495	1076

*Additional Courses Recommended to be Offered. Each pupil must enroll for two of the courses in this group each of the years 7 and 8. (382 clock hours total)

Band	45	98
Orchestra	45	98
Spanish	45	98
Typewriting	45	98
Occupational Training in		
Agriculture	45	98
Distribution	45	98
Industry	45	98
Industrial Arts General Shop	45	98
Art	45	98
Speech	45	98
Drama	45	98
Homemaking	45	98
Vocal Music	45	98

Distribution of Time:

			Per Cent of Total Time
English	180	290	36
Arithmetic	67 1/2	147	14
Social Studies	67 1/2	147	14
Physical Education, Health, Safety	45	98	9
Science	45	98	9
Other Courses (each year, 7 and 8)	90	195	18
	495	1076	100

GRADES VII & VIII, DEPARTMENTAL WORK
(Alternate Plan)

	Average Minutes Daily	Average Hours Yearly
Subjects Required of All Pupils, Each Grade, 7 and 8:		
• English Language Arts, Morning Period Basal reading, oral language practice...	55	119
• English Language Arts, Afternoon Period Directed reading in supplementary readers, literary anthologies, and library materials; composition, language structure, handwriting, spelling...	55	119
• Arithmetic, Morning Period, Steps 1-42 Basic operations and skill maintenance geometric concepts, scale drawing, problem solving, denominate numbers...	55	119
• Arithmetic, Afternoon Period Alternate days with Afternoon Social Studies--drills, supervised study, charts, scale drawing, informal arithmetic...	27 1/2 ave.	59
• Social Studies, Morning Period The Nation, history, geography American heritage, citizenship...	55	119
• Social Studies, Afternoon Period The Nation--same content as morning period...Alternate days with Afternoon Arithmetic	27 1/2 ave.	59
• Physical Education, Health, Safety Appraisal of fitness, conditioning exercises, basketball, touch football, soccer, softball, aquatics, gymnastics, rhythmic activities, track and field, recreational games...	55	119

	Average Minutes Daily	Average Hours Yearly
. Science Life, earth, physical. Alternate days both years or daily for one year	27 1/2 ave.	59
	357 1/2	772
. Additional Courses Recommended to be Offered. Each pupil must enroll for three 119 hour courses from this list during the two-year interval. (357 clock hours total)		
Spanish	55	
Speech	55	
Drama	55	
Art	55	119
Band	55	119
Orchestra	55	119
Industrial Arts General Shop	55	119
Occupational Training in		
Agriculture	55	119
Distribution	55	119
Industry	55	119
Typewriting	55	119
Homemaking	55	119
Vocal Music	55	119

Distribution of Time:			Per Cent of Total Time
. English Language Arts	110	238	25
. Arithmetic	82 1/2	178	19
. Social Studies	82 1/2	178	19
. Physical Education, Health, Safety	55	119	12
. Science	27 1/2	59	6
. Other Courses (each year, 7 and 8)	82 1/2	178	19
	440	950	100

ENGLISH LANGUAGE ARTS

For the migrant child, the major portion of the school day will be spent in developing language skills--listening to and understanding English, speaking English, reading English, and writing English.

In planning the program for the migrant in a shortened school year and a lengthened school day, the following guidelines should be considered:

1. Listening and speaking are the focal elements in the program. They introduce every lesson in reading and writing and every lesson involving reading and writing (as in health, arithmetic, social studies, and science).

2. The progress of pupils through the English language arts program is continuous, with rate adjusted to needs and abilities. For this reason, the program has been described by levels instead of grades. Although chronological age makes a great difference in experiences planned and the materials used with the pupil, the skills instruction is determined by what he has learned, where he is on the continuum, what level he is ready for.

   This arrangement provides opportunity for concentration on the development of facility in oral English before formal instruction in reading is begun and also provides opportunity for the child to work at his optimum achievement level, permitting him to spend as much time as he needs for mastery of content at any given level. Thus by moving at his own growth rate, he does not experience failure and frustration and he is not subjected to purposeless repetition of subject matter.

3. Informal standard speech is the goal. The teacher, as the model to be imitated, is an authentic speaker of English, fluent in the use of English with a dialect acceptable in the school community.

4. Because of the need for a clearly defined sequence of skills, with small measurable steps, the basic program in reading in a pilot school is built upon one series of basal readers chosen by that school. Additional readers from the State-adopted list, along with supplementary readers, workbooks, and duplicated materials, complement the single series. Multi-level materials may be used to extend the reading program. Suggested are Webster Reading Laboratory, SRA Reading Laboratory, SRA Pilot Libraries, and SRA Graphs and Charts Study Laboratory.

   Pupils should have access to abundant library resources which will extend learning experiences as well as provide practice in locating sources of information.

Placement of pupils and evaluation of their progress may be made by using such instruments and techniques as:

- a. Informal tests--teacher-made (vocabulary and comprehension checks)
- b. Standardized achievement tests
- c. Tests included in the teacher's manuals of the reading series
- d. Teacher opinion and judgment

5. Grammar and usage instruction is appropriate to the needs of pupils. If illiteracies occur, simple correction and drills for the individual and/or the group will be needed; one or two illiteracies are tackled at a time. Grammar instruction is functional and inductive.

   The goal is the development of sentence sense, through the use of English language for communication. Memorization of definitions and formal teaching of parts of speech are minimized.

6. The spelling program is planned to coordinate with the composition and study skills instruction. The State-adopted textbooks in spelling are used, not necessarily on grade level, but when the principles and words to be learned will be functional in composition.

7. As in the case of spelling, the learning of punctuation and capitalization is timed to their use in what is read and written. The order is this: the pupil becomes aware of the connection between his voice inflection and punctuation; then as he uses sentence patterns familiar in oral language, he learns how this "talk" is "written," how capitalization and end punctuation signal intonation.

8. Literature study is an outgrowth of the reading of pupil and the reading aloud of teacher. Books--appropriate both to pupil reading level and to his interests--are a part of the classroom setting. The pupil is encouraged to become independent in his reading so that he can read for himself with pleasure and profit.

   Included as an intrinsic part of the reading program and as an important acculturation factor is acquaintance with accepted "standards" in the field of children's literature, including real and mythological heroes from cultures of both English-speaking and Spanish-speaking people.

9. It is recognized that one of the barriers to learning for migrant children has been lack of variety of instructional material in basic reading skills, resulting in over-exposure and lack of interest. Although the State-adopted textbooks in reading have been used in setting level expectancies, over-age migrant pupils may not respond

favorably to these materials in instruction. Other books must be provided, especially after Levels 9 and 10.

10. Just as special materials may be needed for the migrant, special methods may also be desirable: the tactile-kinesthetic approach in spelling and word-attack; programed materials, tape recorded drills in oral language.

11. A pupil record should be established within a pilot program. One area of this record may rate the oral language of the child for whom English is a second language. Another area of the record may define his level of reading growth, determined by an agreed-upon instrument, formal or informal. (See New York City bulletin, Sequential Levels of Reading Growth, pp.46-49.)

The following material on English Language Arts is organized into four sections:

Oral Language
Reading
Written Composition
Sound Production

The first three sections describe the instructional program for the migrant pupil. The fourth section, for teacher reference, describes the sound system of the English language and compares it with the Spanish.

ORAL LANGUAGE

Pattern Drills

Described below briefly are several types of pattern drills, ranging from a simple one requiring imitation alone to more advanced ones demanding independent response. Directions for the drills should be explicit and always demonstrated clearly first in order to elicit the desired response. Attention should be given to only one learning problem (item) at a time.

1. **Repetition drill**

   The teacher says a sentence. Students listen and repeat. The teacher repeats the pattern until students hear and imitate accurately.

   Example: Teacher: This is a chair. (Then backward build-up.)
   Teacher: chair
   Students: chair

   Teacher: a chair
   Students: a chair

   Teacher: This is a chair. (Keep "This is a ..." constant
   Students: This is a chair. while drilling on "chair.")

2. **Substitution or replacement drill**

   The teacher says a sentence, and then asks students to replace one of the words with another. Thus the student learns that substitution of one noun with another (or verb with another verb, etc.) does not change the structure.

   Example: Teacher: This is a chair. This is a ______. (Point to a desk and ask student to use this word instead of chair.)
   ______desk
   Student: This is a desk. (Keep "This is a ..." constant while replacing "chair.")

3. **Completion drill**

   The teacher says table...round. The students complete from memory the pattern learned in repetition drill: The table is round.

4. **Conversion drill**

Simple conversion exercises require the student to change a statement to a question, an affirmative statement to a negative statement, a present-tense verb to another tense, etc.

5. **Progression or chain drill**

This is a routine wherein several patterns are used in succession by students with the teacher supervising, after the teacher has established the pattern with students.

Example: Teacher: book...there
Student 1: The book is there.
Student 2: It's there.
Student 3: There it is.

6. **Dialogue variation**

The teacher begins with a basic structure or dialogue, has the student imitate him, and then requires the student to use a substitute structure independently.

Example: Teacher: This is a pencil.
Student: This is a pencil.
Teacher: What is this?
Student: It's a pencil.

7. **Directed dialogue**

The teacher cues a student with a question to ask another pupil.

Example: Teacher: Lupe, ask Robert the name of the dog.
Lupe: What's the name of the dog?
Robert: It's Lady.

The teacher will be wise to begin a drill of form 2-7 by first establishing the pattern with a repetition (form 1).

It is imperative that a student practicing a pattern be encouraged to change some element of that pattern frequently. His attention should be drawn to the changes (which are stimulated by realia, pictures, oral substitutions, etc.) so that the pattern itself, rather than the particular sentence, is made a part of his habit reflexes.

Hearing Exercises

1. As the teacher pronounces the words (discriminating between vowel sounds), the student points to the correct picture on a chart.

   Example: beet, bit, bat — Pronounce in this order because students can successfully reproduce beet.

2. The teacher asks the student to produce a correlative sentence.

   Example:
   Teacher: The boys study the lessons.
   Student: They study the lessons.
   Teacher: The girls study the lessons.
   Student: They study the lessons.

3. The teacher says a rhyming couplet, asking the student to supply the rhyming word.

   Example:
   Look at that cat.
   He's chasing the ______.

4. The teacher lists a group of words and pronounces one (pit, pet, peat, pot); the student writes the correct one on his paper.

Sound System

There are four methods generally in use for teaching the accurate production of sounds:

1. Imitation (modeling)

2. Description of articulation (general position of tongue)

3. Sound plays and activities

4. Comparison with the nearest sound in the pupil's native language

The following sequences of skills describe the development which should be the goal in oral language instruction. A summary chart of Levels One through Four precedes the specific skills lists.

ORAL LANGUAGE (SUMMARY)

	LEVEL ONE	LEVEL TWO	LEVEL THREE	LEVEL FOUR
SOUND SYSTEM	Hears and produces vowel contrasts, such as pit, pet, pot. →	Hears and more clearly pronounces vowel sounds. →	Maintains by use and some drill. →	Maintains by use and some drill.
	Hears and produces consonant contrasts, such as pit, bit. →	Hears and more clearly produces consonant sounds. →	Pronounces consonant clusters more accurately. →	Maintains by use and some drill.
	Hears and produces intonation pattern of simple statement and simple question. →	Uses rapid, smoother rhythm and intonation in statement patterns with two or three stresses. →	Uses smooth sentences rhythm in sentences with three or four stresses. →	Maintains by use and some drill.
	Hears and produces the rhythm of small word groups and of sentences.	→	→	Maintains by use and some drill.
SENTENCE STRUCTURE	Understands and automatically uses basic word order patterns in statements, questions, and requests. →	Uses more complex sentence patterns. →	Uses more complex sentence patterns with fluency. →	→
		Uses verb combinations such as call up, and call on.	Has command of tag questions and short answers.	
		Uses verb auxiliaries.	Uses also.	
			Uses if, unless, whether, and because.	
	Uses substitute words for nouns. →	Uses expressions of comparison. →	Uses so-that, and such-that. →	→
		Uses possessive forms 's, of phrases, and pronouns.		
	Uses correct position of adjectives modifying nouns and pronouns. →	Uses dependent clauses in object and modifying positions. →	Uses gerunds and infinitives in simple patterns. →	→
	Uses correctly expressions of time, place, and frequency. →	Uses such intensifiers as too and very. →	→	→
	Handles negative expressions.			
VOCABULARY AND ACTIVITIES	Understands and uses words related to his immediate environment, words purposeful to communication in his school experiences: → greetings school family home transportation (to school) hygiene (the body, the restroom) food time words place words descriptive and quality words	Develops oral language facility, with an enlarging vocabulary, through individual expression and group participation. →	→	→

See also chart of composition skills, pages 48–67 of this bulletin, and readers in use in the classroom.

For types and forms of oral language activities and approaches in instruction in Levels Two through Five, see pages 128–129, Bulletin 617.

Specific skills of sound production at early levels are followed by specifics of sentence structure at these levels. Sound production and sentence structure are combined in specific skill lists for Level Four (Oral Language) through Level Eight. Specific skills at these and upper levels will be found also in the composition chart.

LEVEL ONE (SOUND PRODUCTION)

1. Distinguishes voiced/voiceless consonants

Voiced	Example	Voiceless	Example
[b]	boy	[p]	peach
[d]	dog	[t]	to
[g]	go	[k]	cat
[v]	very	[f]	fish
[z]	easy	[s]	see
[ʒ]	usual	[ʃ]	shirt
[dʒ]	jump	[tʃ]	church
[ð]	they	[θ]	thin
		[h]	hot
		[hw]	what

2. Distinguished glide sound

[l]	like	
[ɝ]	bird	(vowel sound colored by [r]
[r]	room	
[w]	wagon	

3. Distinguishes nasals

[m]	mice
[n]	no
[ŋ]	think, sing

4. Distinguishes and produces

[r]	in initial position	room
[r]	after vowels	are
[ɝ]	as in	burn, bird
[r]	in consonant blends	broom, grin

5. Hears and reproduces vowel sounds

Front vowels

[i]	beet	[ɛ]	bet
[ɪ]	bit	[æ]	bat
[e]	bait		

Middle vowels

[ɝ]	bird
[ə]	above

Back vowels

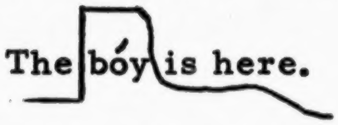
[u]	soon	[ʊ]	pull
[o]	goat	[ɔ]	all
[ɒ]*	Boston as in N. English	[ɑ]	father

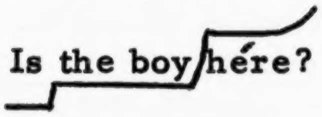
* (This is a vowel nearest Spanish a in padre.)

6. Hears and reproduces diphthong [ɑi] as in high.

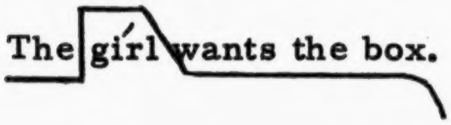
7. Produces diphthong [ɑʊ] house, brown. (No problem for Spanish speaker. Has equivalent sound in own language.)

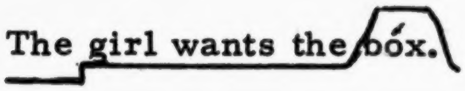
8. Use correct intonation pattern for simple statements and questions.


The bóy is here.


Is the boy hére?

9. Recognizes and practices varying stress and intonation patterns conveying various meanings.


The gírl wants the box.


The girl wants the bóx.

10. Speaks sentences in natural rhythm.

11. Hears and reproduces be in various forms. They are early. They're early.

12. Practices and produces regular formation of plural forms [s], [z], and [ɪz] in classroom drills.

LEVEL TWO (SOUND PRODUCTION)

1. Produces with greater accuracy the following consonant sounds. (See Level One for word examples.)

[b]	[p]
[d]	[t]
[g]	[k]
[v]	[f]
[z]	[s]
[ʒ]	[ʃ]
[dʒ]	[tʃ]

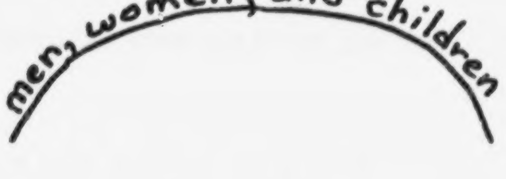
2. Produces [l] in initial and final position (live, ill), (let, deal).

3. Produces glide consonants [w], [dʒ], and [r] with greater accuracy (won, year, run).

4. Produces nasals
   [m] mice
   [n] nice
   [ŋ] sing, think

5. Produces [s] initially either alone or in combination with other consonants with greater degree of accuracy in omitting previous vowel [ɛ]

6. Use intonation curve of series of words or phrases (men, women, and children; books, paper, and pencil).



7. **Uses sentences with three stresses.**

Excúse me, but you are éating my śalad.

8. **Practices sentence rhythms for smoothness and speed.**

9. **Practices can and can't in drill sentences.**

LEVEL THREE (SOUND PRODUCTION)

1. **Pronounces consonant clusters of nasals followed by plosives.**

[m] + [d] **farmed**
[n] + [d] **listened**
[ŋ] + [k] **drinking**

2. **Produces consonants in initial position with greater accuracy and ease.**

[sk] **school**
[ʃ] **show**
[tʃ] **chap**
[dʒ] **jam**

3. **Produces final plosives** [t], [d] **after other consonants with greater accuracy.**

act, old

4. **Pronounces consonant blends with** [l] **. (play, black)**

5. **Pronounces consonants, such as diagraphs** [θ] **(think) and** [ð] **(then), in clusters and in combinations with other consonants.**

Example: fifth, month, keep thinking, what's this

6. Produces [r] in consonant combinations with [p], [b]; [g], [k]; [t], [d].

   proud, brown
   green, crumb
   train, draw

7. Produces vowels

   [ɪ] bit
   [æ] bat
   [ʊ] bull
   [ʌ] but
   [ə] above with more accuracy.

8. Practices varying sentence intonation: When you sée him tell him what I sáid.

9. Drills on intonation of tag questions: He's a stúdent, ísn't he?

10. Drills on sentence rhythm for different meaning in conversational context.

LEVEL FOUR (SOUND PRODUCTION)

1. Produces English vowels with even greater accuracy.

   [ɪ] bit
   [æ] bat
   [ʊ] bull
   [ʌ] but
   [ə] above

2. Produces initial and final consonants [t], [d], [p], [b] with tongue tip in contact with upper gumridge and not the upper teeth.

3. Recognizes and reproduces change of pitch on given sound as signal of changing meaning.

Do you love your mother?

Yes.	(level line--statement)
Yes!	(falling--intonation for emphasis or surprise)
Mary?	
Yes?	(rising intonation signalling question or doubt)

4. Recognizes and uses pause as supersegmental phoneme (affecting meaning).

Mary won't play.	(observation)
Máry| won't play.	(singles out Mary)
Mary won't| pláy.	(singles out activity)

Sentence Structure

Fluency in a second language is dependent upon a student's mastering the framework of the various types of sentences. The method by which this is generally achieved is through intensive pattern drill with the teacher as a model and with tape recorded exercises.

LEVEL ONE (STRUCTURE)

1. Understands and creates statements, questions, and answers using forms of be, do, have, and other selected verbs.

   a. Mastery of present tense forms (morphemes).

   b. Use of the basic question patterns.

      1. Va N V (N)
         Does he speak English?

Difficulty explained by contrastive analysis:
No verb auxiliary in this pattern in Spanish. The Spanish question is structured simply by inversion of word order. Therefore, the Spanish speaker must be drilled repeatedly to elicit:

Aff. Yes, he speaks English.
Neg. No, he does not speak English.

2. Interrogative word V N V
Where does he live?

3. Interrogative word V N
What is your name?

c. Use of appropriate answer patterns.

d. Use of statement patterns.

1. N V (Adv.)
She cries
He sings loudly.

2. N V N
I eat lunch.

3. N Vgives N N
Mary gives me the box.

4. N Vbe Adv. (of place or time)
He is here.

5. N Vbe Adj
Tom is angry.

6. N Vbe N (subj. comp.)
Maria is my sister.

2. Uses personal pronouns as substitutes for nouns in subject position.

Difficulty:
Spanish usually omits subject pronoun because verb form indicates subject. Additional drill needed to establish the substitution.

3. Uses the determiners a, an, the.

4. Uses expressions of time and place (here, at nine o'clock, every day).

5. Understands and forms questions introduced by question words.

6. Understands and forms future time statements (with the present progressive tense of the verb). ("going to...")

7. Uses expressions of frequency (*often*, *sometimes*, etc.).

8. Uses expressions of manner (*slowly*, *carefully*).

9. Uses the negatives *no*, *not*, *never*.

   Difficulty:
   Spanish uses double negatives. Additional drill needed.

10. Uses *a few*, *many*, *a little*, *much*, *a lot* with non-countable items.

    Difficulty:
    Spanish uses same word (*poco*, *-a*, *-os*, *-as*; *mucho*, *-a*, *-os*, *-as*), but meaning changes when used with countable and non-countable items. Added drill is needed to establish split category in English.

11. Uses *this* and *these*, *that* and *those* as position words.

    Difficulty:
    Spanish distinguishes between *that* (*those*) meaning near person spoken to and *that* (*those*) meaning near third person or away from both speaker and person spoken to.
    Additional drill needed to establish *that* as coelesced factor in English. Teacher should demonstrate concept clearly and construct drills to establish contrastive pattern.

12. Uses the "let's..." construction and the "please" construction in requests.

    Difficulty:
    Spanish uses different verb forms for these constructions; hence, attention will be needed to the similar construction in English.

13. Uses personal pronouns as noun substitutes in object positions.

    Difficulty:
    Spanish object pronouns when unmodified always change position and are placed before verb or attached to infinitives, commands, or present participle. Added drills are needed to establish English position of pronouns.

14. Uses past tense forms of selected verbs, such as those needed in first exposure to reading.

15. Uses other and another as modifiers of nouns.

16. Uses prepositional phrases to modify subject.

LEVEL TWO (STRUCTURE)

1. Uses must, should, can.

2. Uses may, might, will.

   Difficulty:

   a. May and might are expressed in Spanish by the use of the subjunctive mood instead of by vocabulary functional (auxiliary) items. More drill is needed to establish English contrast.

   b. Will is expressed in Spanish by a verb morpheme (ending) and does not require an additional lexical item (word). More drill is needed to establish use of will.

3. Uses connected sentence pattern (using and and but).

4. Uses common verb combinations (put on, take off).

   Difficulty:

   English

Subject	Verb	Determiner (Poss. Pro.)	Noun
I	put on	my	coat.
Maria	takes off	her	coat.

   Spanish

Subject	Reflexive Pronoun	Verb	Determiner (Art.)	Noun
	Me	puse	el	abrigo
Maria	se	saca	el	abrigo

   Therefore drills should be contructed with verbs with possessive pronouns to establish English contrastive pattern.

put on take off	+	my your his	our your their	+	N

5. Uses simple prepositional phrases in patterns. (He came for the book.)

6. Drills on question patterns (how, why).

7. Uses the infinitive phrase in answering questions. What does she want? She wants to go home.

8. Extends N Vbe Adj., "English is easy," to "English is easy for him."

9. Uses very and too before adjectives and adverbs.

10. Uses there as adverb in any position in sentence.

    Example: The girl is there (outside).
    There is the girl.

11. Practices with it's, there is, there was.

    Difficulty:

There is There are There were	In Spanish expressed by one word, the verb, which changes only to express time.	Hay, habia, hubo

Additional drill is needed to establish agreement of verb with subject in English because expletive and verb hay does not change to agree with subject in Spanish.

12. Shows possession by using of pattern for inanimate objects.

Spanish uses prepositional phrases always with inanimate objects, as el techo de la casa (the roof of the house).

Concept should be clearly demonstrated as it is drilled.

13. Uses singular noun in the possessive form for persons.

This morpheme needs repeated drill as it contrasts with Spanish phrase: el lapiz de Maria (Mary's pencil)
el libro de Juan (John's book)

The sound [s] added to words to indicate systematic change of meaning is most confusing to a Spanish speaker. It is added to nouns to form plurals and he tends to hear [z] added to nouns also as [S] . He begins to identify it with plurality of things or persons, but is confused when he realizes the addition of [S] to a verb form signified third person singular. (In Spanish it indicates second person familiar.) The further confusion compounded by the same sound (he doesn't see the apostrophe at first) signifying possession can seem almost insurmountable if these are not drilled and redrilled one at a time before he is exposed to the next systemic meaning of [S] . In each series of drills, not only the vocabulary items but the grammar concept (the systemic meanings of the additional sounds) must be made meaningful to the pupils. This requires imagination, a sense of drama, role playing, and ingenuity on the part of the teacher.

14. Uses possessive pronouns.

In addition to the possessive pronouns drilled in the above item, there should be extensive drill on the following pattern.

a.

English:				Spanish			
Poss. P.	N	V	N	Refl. P.	V	det	Noun
My	head	hurts		Me	duele	la	cabeza

(The head hurts me)
(It does not occur to me as a Spanish speaker that anyone else's head could hurt me.)
A part of one's anatomy is always proceeded by the article in Spanish.

b.

Again the contrast							
P	V	Poss. P	N	Refl. P.	V	det.	Noun
I	lost	my	pencil	Se me	perdio	el	lapiz

(The pencil lost itself to me)
(from me) (left me without it)

15. Uses like, the same as, and different from in statements of comparison, as well as -er, -est, more, and most.

16. Uses adjective clauses (that, which) and adverb clauses (where, when) in basic sentence patterns.

17. Uses noun clauses. (I know what you want.)

18. Uses present perfect in simple structures.

19. Uses past perfect tense.

20. Drill to establish English usage of at, contrasted with Spanish.

Difficulty:

English	Spanish
He's at school.	Esta en la escuela.
He's at home.	Esta en casa.
John's at the meeting.	Juan esta en la reunión.

LEVEL THREE (STRUCTURE)

1. Drills on tag questions and short answers.

2. Uses patterns:

(D)	N	Vlinking	Adj
The	box	looks	funny.

3. Extends basic patterns using infinitives and dependent clauses.

4. Uses adverb clauses and notes differences in use/meaning of if, unless, whether, because.

5. Introduced to so...that clauses. I am so happy that I laugh.

6. Drills on intensive and reflexive pronouns in patterns, as I did it myself, I hurt myself. Spanish uses reflexive pronouns much more than English. After drilling for form the pupil should not find use difficult.

7. Uses also.

8. Practice varying sentence intonation: When you sée him, tell him what I sáid.

9. Drill on intonation of tag questions: He's a student, isn't he?

10. Drill on sentence rhythm for different meanings in conversational context.

VOCABULARY

The vocabulary to be taught should necessarily be limited until a student has gained competence in the sound system and the sentence structure of English. The meanings of words can best be made concrete through the use of instructional media, such as realia, posters, charts, transparencies, slides, Areas of study which should have priority are those related to the youngster's immediate environment and needs.

Cognate words can be used to great advantage. Possibilities, if the youngster is in an advanced level, include those which correspond to Spanish words in meaning, such as necessary, intelligent, sincere, impossibility. False cognates (sounding like Spanish words, but having different meanings) can cause trouble:

> Assist is not used for attend.
> Sympathetic is not pleasant, nice.
> Succeed is not occur, happen.
> Actually is not now, at the present.
> Large is not long.

The English vocabulary which the pupil must learn to handle--actively and passively, in listening, speaking, reading, and writing--will center in the school and in the subject matter of the classroom. Lists of words may be obtained from the basal readers, the supplementary readers, the science and health books and other materials used in the classroom.

LEVEL FOUR (ORAL LANGUAGE)

1. Hears stories (read by teacher or via tape recorder) and is able to retell them.
2. Describes simple scenes and actions.
3. Tells short stories in chronological order.
4. Dictates short compositions to the teacher and reads them aloud.
5. Uses complete sentence utterances.
6. Extends phrases (drank water) to sentences (Maria drank water.) when cued by indicating pupil in drill.
7. Gives sentence answers to questions.
8. Continues drill (class and tape) of sound and structural systems through pattern study.
9. Extends vocabulary, particularly through reading activities.

LEVEL FIVE (ORAL LANGUAGE)

1. Uses correct form of verb to agree with subject.
2. Uses correct form of verb tenses with greater ease.
3. Makes accurate pronoun substitution in oral activities.
4. Uses contractions accurately in sentences.
5. Corrects "puppet" manipulated by teacher when puppet produces sound error in speech.
6. Benefits from brief phonetic advice given to improve sound production.
7. Maintains vocabulary already learned and transfers vocabulary learned in reading to his own active usage.

8. Uses vocabulary and correct forms of nouns, pronouns and verbs in variety of patterns with facility.

9. Produces consonant blends foreign to the Spanish sound system with close approximation to native English speaker.

10. Approximates intonation and stress patterns of native English speaker.

11. Improves self awareness of usage errors. Continues drilling for more complex structure for non-English speaker.

12. Continues drills for intonation, cadence, stress, pause, and timing.

LEVEL SIX (ORAL LANGUAGE)

1. Pronounces final consonants clearly.

2. Corrects himself in some sound errors in oral communication.

3. Recognizes and uses correctly some idioms used in peer group.

4. Continues drills for sound and structure of English and for vocabulary maintenance and expansion, since his opportunity to use English vocabulary outside of classroom may be limited.

5. Records voice in order to listen for error sounds.

6. Associates sounds with intrinsic values in poetry and phrase patterns.

7. Discovers words which express his perception through intrinsic sound value.

LEVEL SEVEN (ORAL LANGUAGE)

1. Develops greater awareness of relationship of voice patterns in sentences to punctuation. Recognizes falling intonation relates to period, rising to question mark and great degree of change of pitch to exclamation point.

2. Extends words which express sensory perceptions to occasional sentences.

3. If patterns of Spanish articulation are no longer transferred to English sound system, pupil benefits from cognates to aid in expansion of vocabulary.

4. Correctly identifies various graphemes in different environments with sound symbols.

LEVEL EIGHT (ORAL LANGUAGE)

1. Relates intonation pattern of sentences to capitalizing beginning of sentences and using question marks and periods.

2. Transforms phrases into complete sentences in oral communication.

3. Uses where and when (adverbial words) and phrases to complete sentences in speaking.

4. Identifies vowels and consonants in reading with sounds.

5. Identifies consonant blends in reading and speaking and produces from recall identical blends.

6. Knows meaning of rhyme and produces sounds to rhyme with given sounds.

7. Identifies and writes as well as orally uses agreement of subject and verbs, to be, present tense and past tense, to have, present tense and past tense, to have as auxiliary in present perfect tense with seen, come, given, done, and run.

8. Identifies and uses correctly well and grand in adverbial or adjectival context.

9. Selects and uses correct choice of demonstratives them, those when used alone or with nouns.

READING

In the migrant school program, the first grade pupil may not have skills in oral language and other characteristics of maturity to enable him to enter a typical first grade reading program. For this reason, a preliminary stage, paralleling a kindergarten or preschool program, has been planned. Level One, based on an entirely oral approach to language study, is designed to prepare the non-English speaking pupil for Level Two, READING READINESS. Level Three through Fifteen takes the pupil from Primer through Grade 6 skills.

To the experienced reading teacher in the elementary school, the following chart will identify a fifteen-level sequence, paralleling a basal reading series. This is not to say that instruction occurs only in the basal reader or that pupils move only through each basal reader of a single series. It means that the base of operation is the basal reader's skills sequence, and the basal reader is to be built upon, departed from, and checked against in reading instruction.

MIGRANT READING PROGRAM

		Additional Sources on Levels	
Levels of Reading Growth	Instructional Levels	New York City Sequence	Descriptions, TEA Bulletin 617
Level One	Instructional Program for Non-English Speaking Children		
Level Two	Reading Readiness	Level A	Grade 1
Level Three	Pre-Primer		
Level Four	Primer	Level B	
Level Five	Basal Reader, Grade 1		
Level Six	Basal Reader, Grade 2.1	Level C	Grade 2
Level Seven	Basal Reader, Grade 2.2		
Level Eight	Basal Reader, Grade 3.1	Level D	Grade 3
Level Nine	Basal Reader, Grade 3.2		
Level Ten	Basal Reader, Grade 4		Grade 4
Level Eleven	Supplementary Reader(s) Grade 4	Level E	
Level Twelve	Basal Reader, Grade 5		Grade 5
Level Thirteen	Supplementary Reader(s) Grade 5	Level F	
Level Fourteen	Basal Reader, Grade 6		Grade 6
Level Fifteen	Supplementary Reader(s) Grade 6	Level G	

For details in the progression of skills, the teacher may refer to three sources:

1. The teacher's editions of the basal reading series, and related materials of the publisher.
2. The chart and grade descriptions, TEA bulletin 617, pp. 115-166.
3. Sequential Levels of Reading Growth in the Elementary School, New York City.

Items 2 and 3 are on file in the principal's office of each pilot school.

WRITTEN COMPOSITION

Level One is based on an entirely oral approach to language study; however, appreciation of written language is developed through story books from which the teacher reads aloud, and use of name labels on pupils' desks and supplies.

At Level Two the student is introduced to manuscript formation and letter names. Accompanied by beginning drills in auditory discrimination.

Techniques to be used will include the teacher's demonstrating letter strokes and letter formation at the chalkboard, letter tracing in the air and clay board, and kinesthetic tracery on paper.

At Level Three, simple experience charts and dictated stories developed by teacher and pupils are a valuable resource in the initial stages of composition and writing. Pupils may be encouraged to compose simple sentences.

At Level Four, written compositions, short and simple, are built with familiar words about experiences. They may be dictated first to the teacher and then read by the pupil. Children may be encouraged to compose simple sentences.

Manuscript writing practice is provided. The child learns to spell familiar words needed in written composition. Attention may be called to such mechanics as capitalization, punctuation, and indention.

A flow chart of composition skills, Levels Five through Fifteen, follows.

OMPOSITION

	5	6	7	8	9
OS	Uses word recognition skills in determining meaning of new words in what he hears and reads.	→	→	→	→
	Transfers words heard and read to his own speaking and writing.	→	→	→	→
	Eliminates sound substitutions.	Enunciates medial and final consonants.	→	Continues to work on clear diction and careful enunciation.	→
	Uses words with some respect for accuracy of denotation.	Shows care not to confuse similar sounds or similar looking words whose meanings are not interchangeable.	→	→	→
	Discovers words which express his sensory impressions.	→	→	→	→

10	11	12	13	14	15
Applies word recognition skills in determining meaning of new words.	→	→	→	→	→
Uses words in his writing and speaking from his increasing vocab.	→	→	→	→	→
→	→	→	→	→	→
→	→	Develops a feeling for appropriateness of words, choosing between the words with similar denotation the word with the more suitable connotation.	→	→	→
Uses synonyms to avoid repeating the same word.	→	Varies his choice of words to eliminate undue repetition	→	Avoids unnecessary repetitions and overwording, overworked and trite expressions.	→
Uses vivid words in preference to flat, colorless words.	→	Grasps the distinction between vague and indefinite words and those which are more specific and thus more exact.	→	→	→

COMPOSITION

	5	6	7	8	9
SENTENCES	Becomes aware of voice patterns at the end of the sentence; becomes aware of habits of cadence in all types of sentences; relates to facts of capitalization and punctuation.	→	→	→	→
	Learns that words in a sentence stand for related ideas or a thought; sees the close link between the idea or experience and the word symbols.	→	→	→	→
	Uses complex sentences in telling a story orally.	→	→	→	→
		Begins to get a feeling for sentences which "paint a picture," describe a character or place more vividly, and occasionally use such sentences.	→	Builds sentences which vividly describe a place or person.	→

10	11	12	13	14	15
→	→	→	→	→	→
→	→	→	→	→	Has a developed sentence sense.
→	→	→	→	→	Demonstrates his growing skill and knowledge through conscious control of language patterns.
Varies sentence structure to include complex forms along with simple, particularly by controlling connectives (when, if, because);	→	→	→	→	Uses phrase and clause modifiers naturally and easily, particularly in speaking.
Composes compound sentences by controlling and and but.	→	→	→	→	Understands that varied beginnings in sentences improve the effect.
→	→	→	→	→	→

COMPOSITION

	5	6	7	8	9
PARAGRAPHS	Is aware of events in proper sequence (chronological order in narration).	Follows simple directions from teacher.	Begins to arrange ideas in sequence.	→	→
	Observes indention for a new paragraph in what he reads; later indents in his own writing.	→	Observes indention in his reading for change of speaker.	Indents for a new paragraph	→
	Plans oral and written compositions with teacher's guidance.	→	→	→	→
	Directed to stay on the subject in story telling and in dictation.	Stays on the subject in his independent writing.	→	→	→
			Checks on what has been written or spoken in terms of arrangement of ideas in sequence.	→	→

10	11	12	13	14	15
Understands that paragraphing facilitates meaning.	→	Begins to state in a sentence the main idea of the paragraph he is planning or has written.	Organizes data by selecting major topics with a broad topic; then selecting minor topics and arranging them sequentially.	→	Begins in expository comp. to construct each paragraph on basis of different phrases, aspects, or divisions of the subject, each sentence within the paragraph contributing to the presentation of the one main idea of that paragraph.
Learns in narration to construct paragraphs on the basis of time units, grouping chronologically within the paragraph.	Uses a new paragraph for a change in speaker in dialogue.	→	→	→	→
Develops simple plans for oral and written paragraphs.	Plans a paragraph before beginning to write.	→	→	→	→
→	→	→	→	→	→
→	→	→	→	→	→

COMPOSITION

	5	6	7	8	9
OUTLINING			Finds main idea in paragraph.	Arranges sentences in order of sequence or events of a story, as preparation for outlining.	→
WHOLE COMPOSITION	Limits his written composition to a single paragraph; tells stories which are longer than one paragraph.	→	→	→	→
NOTE-TAKING					

10	11	12	13	14	15
Selects main topic and supporting details before speaking or writing.	→	→	→	→	Lists main topics and subtopics in logical sequence. Learns the outline form, using Roman numerals, letters, and Arabic numerals in sequence.
Writes compositions of one of more paragraphs, arranged in chronological sequence in narration, and following different phases of a general subject in exposition.	→	→	→	Writes composisions of two or more paragraphs, using a logical sequence for the type of writing.	→
				Begins in reference reading to take notes without copying exact words.	Takes notes from reference reading without copying exact words except when enclosed in quotation marks. Learns to take notes on what he reads, usually for study purposes and when directed to do so by the teacher.

COMPOSITION

	5	6	7	8	9
SELF IMPROVEMENT	Notices that the teacher "improves" what he writes (when she corrects gross errors).	→	Is assisted by the teacher in proofreading his objective writing. (The teacher does little editing of the pupil's personal, subjective expression.)	→	→
REVISION AND PROOFREADING	Gets the idea of "looking over" written work he does.	→	→	→	→
CORRECTIONS	Is alerted by the teacher to usage errors in oral compositions at an appropriate time.	→	→	→	→
	Is helped to correct usage errors through planned language lessons.	→	→	→	→

10	11	12	13	14	15
Makes a first draft of a written composition, and rewrites to make a final copy after proofreading and revision.	→	→	→	→	→
Begins to revise work with the teacher's help.	→	Makes simple revisions at the direction of the teacher.	→	Revises phraseology, sequence, and statement of fact. Needs teacher help in most of this kind of editing.	→
Begins to read aloud to test a sentence; applies a proper capitalization and terminal punctuation to correspond to the voice signals he is learning.	→	Reads aloud as a test of the complete sentence; applies proper terminal or other punctuation to correspond to voice signals.	→	→	→
Makes corrections in written composision in words, in usage, and in mechanics; checks with the dictionary or other sources for spelling.	→	→	→	→	→
→	→	→	→	→	→

COMPOSITION

	5	6	7	8	9
PERSONAL RECORDS OF ERRORS AND WEAKNESSES	Becomes conscious of misspelled words; begins to check with his own list, a class list, a primary dictionary, or the teacher.	→	→	→	→
	Assumes some responsibility for self improvement by keeping a list of words which he uses.	→	→	→	→
MECHANICS HAND-WRITING	Learns manuscript writing; writes large while he works to coordinate his movements.	Continues manuscript writing; gradually reduces the size of letters.	Learns to read cursive writing as preparation for writing it.	Maintains skills in manuscript by using it on charts, posters, and other lettering problems.	→
	Sees the likenesses and the differences between the standard form and the one he produces.	Uses a model to judge his own writing; confirms the habit of writing like the standard.	Moves to cursive writing when he demonstrates facility or has control of manuscript writing. (Control is demonstrated if a single letter can be recognized out of its context--legibility--; if letters in a word are compact and there is good space around words and between lines; if there is a reasonable degree of uniformity in size, shape, and alignment of letters and words.)	Improves legibility, spacing, and uniformity of cursive writing.	→
	Is assisted in detecting errors in form that he makes; works toward correcting them.	Detects errors in form and concentrates on correcting them.	→	Develops a rate sufficient to cope with problems at hand.	→

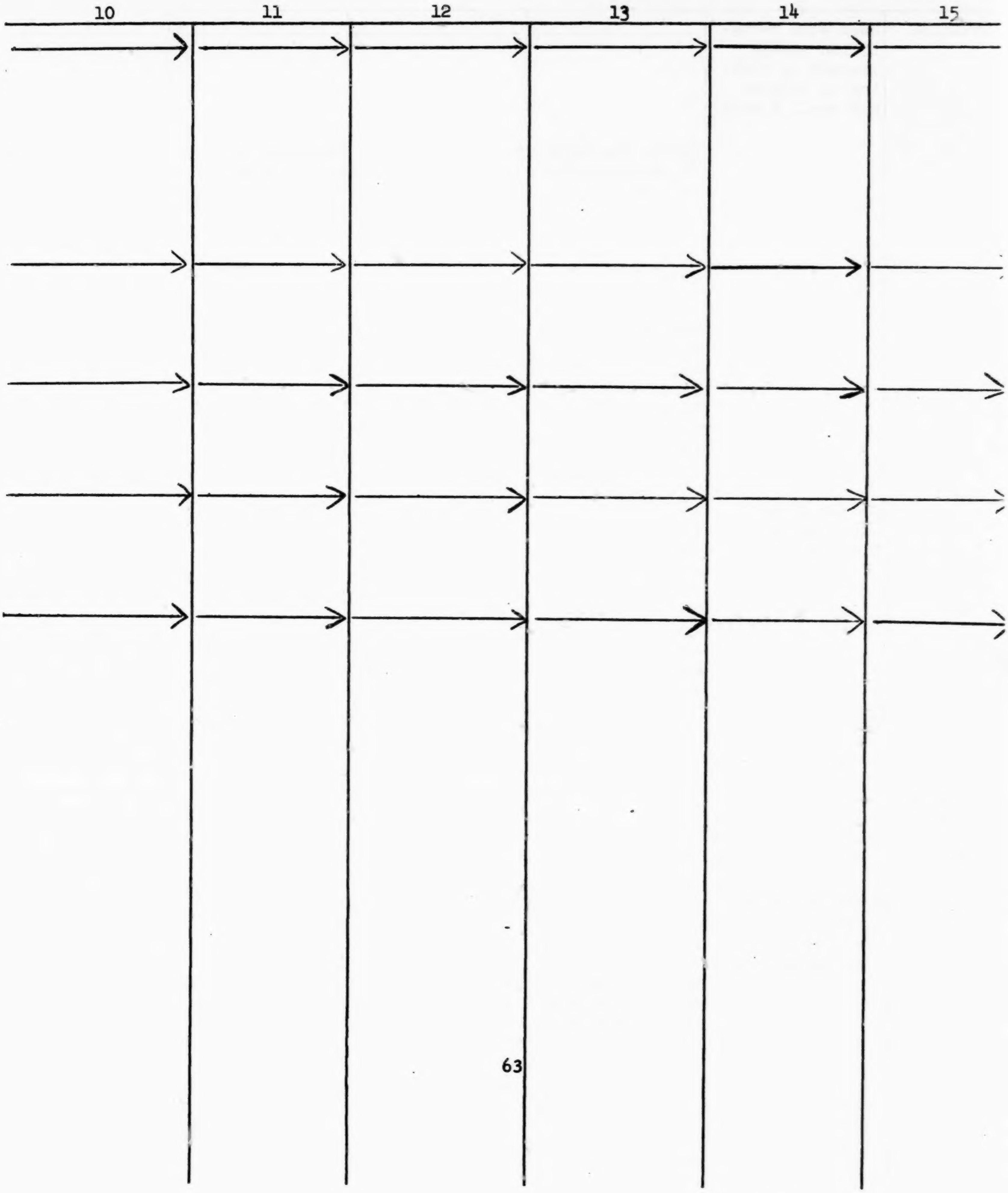
10	11	12	13	14	15
Keeps an accurate personal record (list, card file) of words he has misspelled in his writing.	→	→	→	→	→
Begins to keep an accurate personal record of words he is learning to pronounce.	→	→	→	→	→
→	→	→	→	→	→
→	→	→	→	→	→
→	→	→	→	→	→

COMPOSITION

	5	6	7	8	9
CAPITALIZATION	Capitalizes the beginning word of a sentence, the word I, proper names, initials, and other words as needed in his own writing.	→	Capitalizes names of the days of the week, important words in titles and others needed in his own writing.	→	→
PUNCTUATION	Uses a period at the end of a sentence and after initials; understands the meaning of the exclamation point and question mark as observed in his reading.	→	Includes the use of the question mark with understanding; relates to voice cadence patterns; increases his experience with exclamation mark.	→	→
	Learns about the apostrophe in easy contractions, such as don't and singular possessives.	→	Uses the apostrophe in easy contractions and in singular possessives.	→	→
				Uses a comma after salutation and close of friendly letters, between city and state, between day and year.	→
		Notices quotation marks in his reading.	→	→	→
ITALICS AND UNDERSCORING					

10	11	12	13	14	15
Capitalizes *street* and similar parts of names, proper adjectives, historical events, proper nouns, and other words as needed in his writing. Uses a period after numbers in a list and begins to use some abbreviations.					
→	→	→	→	→	→
Uses commas in series, and after *yes* and *no*.	→	Uses the comma between direct quotation and rest of sentence.	→	Uses commas between clauses of compound sentences joined by *and* and *but*; and to enclose appositives.	→
		Uses the colon in the greeting of a business letter.			
→	→	Uses quotation marks for all direct quotations.	→	→	→
		Uses apostrophe in plural possessives.			
Recognizes italics in his textbook used to set off a title or name; in his writing, uses underscoring for italics in titles of books	→	→	→	Uses underscoring for italics in his own writing, as in titles of books.	→

	5	6	7	8	9
COMPOSITION MANUSCRIPT FORM	Observes indention for paragraphs in his reading. Observes some elements of form on the charts prepared by the teacher (spacing, margins, title, size of letters).	Indents for a paragraph in his writing.	→	→	Consistently uses paragraph indention.
		Learns to leave margins at top, bottom, and sides; endorses paper as instructed.	→	→	→
		Uses a simple form for a friendly letter.	→	→	Uses appropriate forms for invitations, letters of reply and inquiry.
					Uses a simple chart form for lists, outlines, memoranda, and announcements.
				In experiences in reading poetry, notices poetic forms.	Uses form for poetry he writes or copies.



COMPOSITION

	5	6	7	8	9
SPELLING	Uses word recognition skills learned in reading in helping him spell a word.	→	→	→	→
		Builds new words by adding common suffixes.		Enlarges the number of words he spells correctly; extends his use of rules. .	→
		Begins to learn a method for spelling a word, a sequence involving visualizing, pronouncing, recalling, writing, and checking.	→	→	→
	Spells correctly words needed in his writing.	Learns to spell words on individual and class lists, and basic spelling lists; spells correctly words which he needs in his writing.	→	Increases his responsibility for spelling words correctly.	→
USAGE Usage concerns correctness and propriety in word and phrase.	Develops an awareness of some usage errors in his oral communication, and begins, with the help of the teacher, to eliminate them.	→	→	Has successfully eliminated some errors in usage from his oral and written language; continues to work on errors which persist.	→
	Hears standard usage in speech of the teacher and some classmates.	→	→	Begins to differentiate levels of usage; is quite familiar with usage of informal speech and writing.	→
		Reads standard usage in informal writing and in his textbooks.	→		

10	11	12	13	14	15
Uses word recognition skills when they apply.	→	→	→	→	→
Increases his power to spell new words by applying rules, such as dropping final e, changing y to i, doubling the final consonant, and using qu.	→	Continues to make generalizations about how words are spelled; reviews these rules periodically; applies them regularly.	→	→	→
Uses a method or procedure for learning to spell a word.	→	→	→	→	→
Learns words from basic lists; uses the dictionary to check on spelling.	→	→	→	→	→
→	→	→	→	→	→
→	→	→	→	→	→

COMPOSITION

	5	6	7	8	9
GRAMMAR Grammar involves the study of form and structure of English sentences.	Identifies in his reading sentences that tell and ask; associates meaning and end punctuation of such sentences.	Associates meaning and end punctuation of sentences that exclaim and command; is aware of voice patterns when these sentences are spoken.	→	→	→

10	11	12	13	14	15
Recognizes and uses complete sentences; makes generalizations about the function of the sentence from his experience with sentences in speaking, listening, reading, and writing.	→	Recognizes the sentence as the basic unit of thought.	→	Identifies sentences by their function (interrogative, imperative, declarative, and exclamatory.	→
					Identifies simple subject and simple predicate.

SOUND PRODUCTION

To define the specific area to which the following information belongs, a word of caution is necessary. It is not phonics. Phonics deals with reading and the letters of the alphabet and the application of phonics to the teaching of reading. Written symbols and spoken symbols belong to entirely different systems of language and the materials presented in this section are classified under phonetics. For a clearer grasping of the material, the teacher should remember only sounds and their accurate description and production are the concern of this section.

In order for the teacher to know and understand the Spanish speaking child's difficulty in producing English sounds, the teacher should know which English sounds are not common to the Spanish language.

A chart (page 70) showing where and how English sounds are produced is part of basic reference material for the teacher. If the teacher knows precisely the manner of articulation and placement of the articulatory organs as well as whether or not the vocal bands are vibrating in the particular English sound production, he can give the brief phonetic advice necessary to correct the pronunciation difficulty of the pupil. There is a need to classify sounds accurately instead of saying a broad a or a flat a, or the a as in father, which may be pronounced quite differently by a New Englander and a Texan.

For that reason the following descriptions of English sounds are given in the briefest non-technical terms possible.

To classify sounds accurately, three criteria are used to describe them:

1. Where the sound is made and by which articulatory organ.
2. The manner in which the sound is made.
3. Whether or not the vocal bands are vibrating when the sounds are made.

The articulatory organs used in English sounds are the lips, tongue, teeth, gum ridge (behind and just above the upper front teeth), the hard palate, and the soft palate, or velum.

The major articulation descriptions are as follows:

1. Bilabial articulation is one in which both lips are either brought close together or pressed together.

2. Labiodental articulation is made by the upper teeth resting lightly on the lower lip.

3. Interdental articulation is one made with the tongue tip extended slightly between the (front) upper and lower teeth.

4. Gum-ridge articulation is made by the tongue tip touching the gum-ridge (just back of the upper front teeth).

5. Palatal articulation means that some portion of the tongue touches the hard palate.

6. Velar articulation means that the back of the tongue is raised to touch or almost touch the soft palate (velum).

7. Glottal or aspirate--An aspiration of air aided by tension of the glottis.

The manner of articulation is described according to whether the air stream and sound have been dammed up within the mouth or throat by an articulatory organ and then allowed to "explode" suddenly, or whether the sound escapes gradually through a restricted or narrowed passageway. Thus descriptions of sounds according to their manner of articulation are as follows:

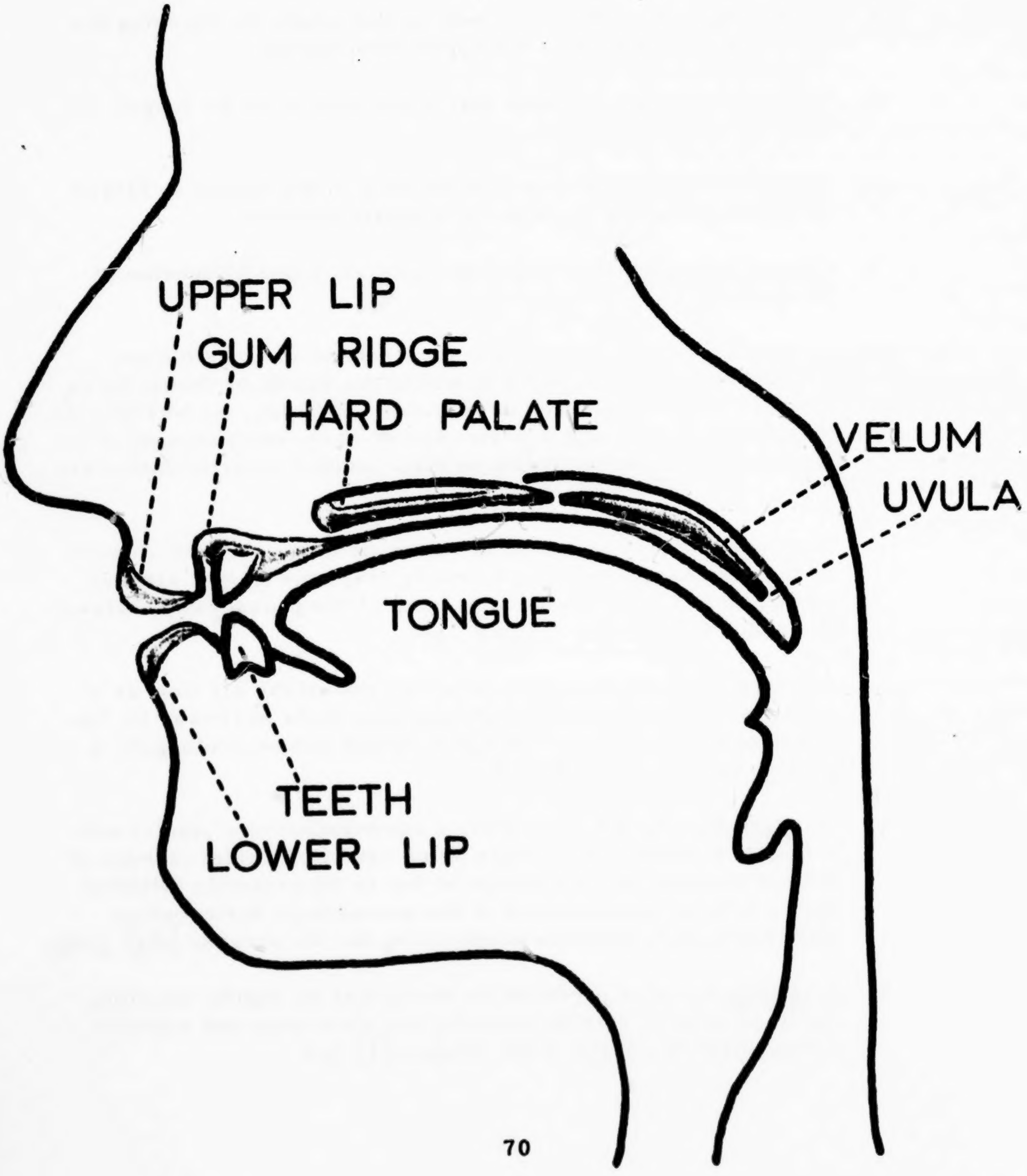
1. A stopped or plosive sound is one made by a complete closure of the air passageway which briefly stops the flow of air and sound, and then by a sudden opening of the passageway, allows the sound to explode. [p] pet

2. A fricative sound is one made by friction of the air flow as it escapes slowly through the passageway made narrower by the organ of articulation. A fricative sound can be prolonged, a plosive cannot. [s] So

3. An affricate sound is in reality a combination of a plosive and a fricative sound. It is made by an extremely brief closure of the air passageway at some point but is immediately followed by the gradual enlargement of the passageway during which time a fricative sound is produced by the air stream. [dʒ] judge

4. A lateral sound is produced by the tongue tip tightly touching the hard palate, thereby allowing the airstream and sound to escape over the sides of the tongue. [l] low

MAJOR ARTICULATORY ORGANS



5. Glottal or aspirate--An aspiration of air aided by tension of the glottis. [h] house

The third factor which is a vital consideration in the classification of sounds is the vibration or lack of vibration of the vocal cords. When they are relaxed, the escaping sound is called voiceless. When they vibrate, the sound is called voiced.

English consonants with the exception of four, can be paired in minimal contrast. This simply means that the two sounds are articulated in exactly the same manner by the same articulatory organs, but that the air stream of one sound passes over relaxed vocal bands, while the other passes over vibrating vocal bands. Examples [t] tea, [d] dog

After an understanding and mastery of English consonant sound production, the teacher should be able to produce any sound by its phonetic description.

Before describing the production of English vowels, major difficulties the Spanish speaking pupil will have with English consonants may be summarized as follows:

> All his consonants which should be plosives will more closely resemble fricatives. The reason is that the Spanish plosives, [t], [d], are made by the tongue tip being pressed against the back of the front teeth, thus damming a lesser volume of air than if the tongue tip touches the gum ridge. The Spanish plosives [p], [b], are made without the lips pressed together tightly; thus the air stream escapes with less explosion. THERE IS NEVER AS MUCH MUSCULAR TENSION IN PLOSIVE SPANISH SOUNDS AS IN ENGLISH. Spanish has no plosive sounds at the end of words. The teacher should plan drill and instructions to overcome these problems.

All English vowels are voiced and are relatively unrestricted in air flow. Therefore, a different method of classification is needed. Vowel sounds are phonetically described according to the height of the front, back or middle of the tongue in the mouth, whether the tongue is relaxed or tense, and sometimes whether the lips are spread or rounded. Thus the [i] in eat is described as a spread high front vowel because the lips are spread, and the front of the tongue is as high in the mouth as possible to still allow free passage of air. The vowel charts, pages 80-82, show vowels as determined by tongue placement in the mouth.

Vowels present great difficulty to the non-English speaking learner. The primary problem areas are as follows:

> Spanish does not have any of the following vowel sounds; therefore, the Spanish learner of English will at first neither hear them nor be able to reproduce them.

[ɪ]	(it)	[æ]	(at)
[ə]	(the man)	[ɝ]	(fur, fir)
[ɑ]	(cot, got)	[ɚ]	(player)
[ʊ]	(full)	[ɔ]	(awe, all)

Learners of a second language tend to hear the target language sounds in terms of their own language. Therefore, repetition, repetition, and more repetition of the accurate English sounds in context are necessary to provide auditory discrimination of the English sound system by the pupil. Although small children are naturally imitative, competency in English sound production on the part of the teacher does not ensure the same performance by the pupils. Also, the briefer the time of exposure to the teacher, the less likely is the pupil to achieve accurate imitation of the teacher's speech. An English speaking child has heard his language approximately 40,000 hours. When the teacher realizes that some pupils learning English have not faithfully produced the English sound, he should model the correct sound again. If error still persists, the teacher should simply and briefly instruct the pupil on how to correct his error. "Spread your lips in a smile." "Lower the front of your tongue." "Keep your motor vocal cords turned off." Mirrors may be provided for the period which is used for drilling for sound perfection. Thus a pupil can see if his lips are puckered or spread, or tightened like the teacher's.

Children enjoy sound play. They are not far removed from the babbling period of their infancy. They delight in intrinsic sound values and in exploring themselves enough to "know" the geography of their mouths. A teacher should decide in advance that the sound play period can be and will be fun for all. Then the fascination of self-hearing and the tongue twisting of words around new sounds will have strong appeal. These sound plays should often be scheduled as activities for strengthening the pupils' ability to produce the English sounds. By no means should the "sound play" be allowed to degenerate into boring, dull and oftentimes incorrect repetition of the sound. Never drill mistakes in pronunciation. With practice in watching the position of the pupils' mouths, a teacher can quickly spot the one who is incorrectly producing a sound. The following is an example of a sound play:

The teacher may take a baby doll which can also cry and lay it in a cradle. Using several pupils who can understand English, she demonstrates the playing of the game with them. One of them may then give the instructions to the class. After the doll is laid in the cradle, the teacher tells the boys and the class that the baby is sleeping. She turns her head to the first boy and says shhhhhhh, shhhhh; this boy is to turn to the boy behind him and say shhhh. As long as the sound is made correctly, the baby stays asleep. The teacher should walk around the room on tiptoe and listen carefully for substitution of ch for sh--as well as other errors. The first time an error is made, the baby awakes and cries. The teacher may signal a previously chosen girl to get the baby up and imitate its crying.

The sound charts and the general difficulties of the non-English speaking pupil serve as a background for examining the problem in greater detail.

Consonants

[b] (bat) Voiced bi-labial plosive

Difficulties:

The Spanish speaker's lips are more relaxed than the English speaker's. Lesser muscular tension causes the sound to escape as a voiced bilahial fricative.

Instructions:

Tell the pupil as you demonstrate that he should tighten his lip muscles. Call his attention to the fact that in English, the sound is a "wall" or "fence" to stop or end some words. Ex. [b] (cab). The lack of this sound in this position in Spanish prevents many from hearing it. Time is saved if this is pointed out and corrected at the lower level.

[d] (dog) Voiced lingual-gumridge plosive

Difficulties:

The pupil will superimpose the Spanish fricative [đ] between vowel sounds. His [d] in other positions lacks the explosive quality of English words. He will tend to lose it entirely or to let it become a voiceless fricative when it is in final positions.

Instructions:

Move your tongue back into your mouth (it will have been extended slightly when he pronounces [d]) to the bump or ridge above your front teeth. Leave your tongue there as you repeat [d] .

[f] (fat) Voiceless dental-labial fricative

Difficulties:

The pupil has none in a medial position.. He will tend to voice the sound in final position. Ex. fife-five.

Instructions:

Notice that the [f] sound ends the word. Practice prolonging it. Turn off the motor in your throat.

[g] (go) Voiced palatal stop

Difficulties:

Spanish-speaking children tend to lose sound when [g] is articulated between vowel sounds. The Spanish g between vowels is a "soft" fricative (agua).

Instructions:

Try to sound like a croaking frog. If the pupil is in an upper level, he may be told to close the passageway between soft palate and back of tongue. If he says he cannot, ask him to gag. The gag reflex reminds pupils of the control they have over the base or back of the tongue and the soft palate.

[h] (hot) Voiced aspiration or glottal fricative

Difficulties:

In speaking there should be no difficulty. The Spanish speaker in Texas has the same sound equivalent represented by the spelling Jua.

Instructions:

Go around the room asking each pupil to say "Juan" or "Juárez." Then remodel the English word after reminding them they have just successfully reproduced the equivalent sound in Spanish.

[k] (cat) Voiceless lingual--velar plosive

Difficulties:

None in speaking, as Spanish has the equivalent sound.

[l] (like) Voiced lingua-aveolar or dental

Difficulties:

There may be some distortion by Spanish articulation superimposed on the sound. The Spanish [l] is articulated with the tongue tip placed against the back of the upper front teeth and the middle of the tongue flatter in the mouth than English l.

Instructions:

With your tongue tip touch the upper gum ridge above your front teeth and let the middle of your tongue hang curved downward in your mouth as you say it. When it "fences" or "walls" in a word at the end, be sure to let your tongue rest flat in your mouth before you turn off your motor.

[m] (mice) Bi-labial nasal

Difficulties:

None except before [f] sound when Spanish sounds m as n, and when m is in a final position. Difficulties are found in such words as emphasis and album.

Instructions:

Keep your lips pressed together always in the English sound. Lock them tightly until you turn off your motor.

[ŋ] (sing) Voiced lingual-gum ridge nasal

Difficulties:

This is the sound which the grapheme n assumes in words such as thank and sing. Spanish has the equivalent before [k] and [g] but never in Spanish is [ŋ] represented in orthography by ng. In beginning audio-lingual English, no difficulty can be anticipated. (Difficulty will come when the pupil reads and writes and decides he must give phonetic value to g.)

Instructions:

If the Spanish speaking pupil experiences any difficulty, remind him that his own language has the same sound in words such as cinco, tengo. Let the class or individuals practice the whole word in their native language and then ask the group to repeat chorally the [ŋ] after you have modeled it.

[p] (pat) Voiceless bi-labial plosive

Difficulties:

The pupil may voice the sound and will articulate it with his tongue tip placed behind the upper front teeth. This distorts the English sound.

Instructions:

Ask the pupil to move his tongue tip back to the gum ridge above his upper front teeth. Tell him to turn his motor off. Watch to see if he keeps it there as he repeats the [p] sound you have modeled again. (See if he can blow a piece of paper with an aspirated puff of air following the [p].)

[r] (rat) Voiced lingual-aveolar (or palatal)

Difficulties:

This sound represents a major problem in the learning of English by Spanish speakers. It may be trilled or it may take on a quality similar to that of [d].

Instructions:

Curve your tongue more in the central part and place the tip close to, but not touching the back of the gum ridge of the front of the hard palate. (The Spanish r and rr demand that the tongue blade touch the gum ridge and "flap.") The English [r] only curls toward the palate but leaves enough space for the air to flow through the passageway, causing friction.

[s] (so) Voiceless, lingual--gum ridge fricative

Difficulties:

The Spanish speaker will sometimes voice this sound when English language does not allow that freedom. The distinction in [S] and [Z] is required of the pupil in words in which the two make a difference in word meaning. (Ex. seal-zeal). The Spanish speaker will tend to pronounce them identically.

Instructions:

Turn off your motor on this sound.

[z] (is) Voiced, lingual-gum ridge fricative

Difficulties:

The pupil will sound this as a voiceless [S] if not corrected.

Instructions:

Turn on your motor.

[ʃ] (show) Voiceless-lingua palatal fricative

Difficulties:

The non-English speaking Spanish pupil does not have this sound in his system. He will try to substitute [s] or [z] or [tʃ].

Instructions:

Move your tongue tip back from the gum ridge to immediately behind it.

[ʒ] (vision) Voiced lingual-palatal fricative

Difficulties:

No such sound exists in the Spanish language. Pupils tend to substitute [s], [z], or [tʃ] for [ʒ]

Instructions:

Same as for [ʃ], but turn your motor on.

[tʃ] (cheek) Voiceless gum-ridge palatal affricate

Difficulties:

This sound exists in Spanish in words such as muchacho. The Spanish pupil will have no trouble unless he has been influenced by English and in over-compensating, substitutes the [ʃ].

Instructions:

Make the same sound as the [tʃ] in muchacho.

[dʒ] (judge) Voiced gum ridge palatal affricate

Difficulties:

This sound does not exist in Spanish. Before the pupil reads, he is likely to substitute the [t] or the [tʃ]. After seeing the printed symbols, his substitution for the sound when represented by the written symbol j will be as in yellow.

Instructions:

(To preschoolers) Turn your motors on.

[j] (yellow) Voiced lingua-palatal fricative

Difficulties:

The Spanish speaker learning English experiences difficulty with this only when he reads and confuses letters and sounds. No difficulty experienced early.

[θ] (thank) Voiceless lingua-dental fricative

Difficulties:

The Spanish speaking child may substitute [t], [d], or [f], since [θ] is not found in Latin American Spanish.

Instructions:

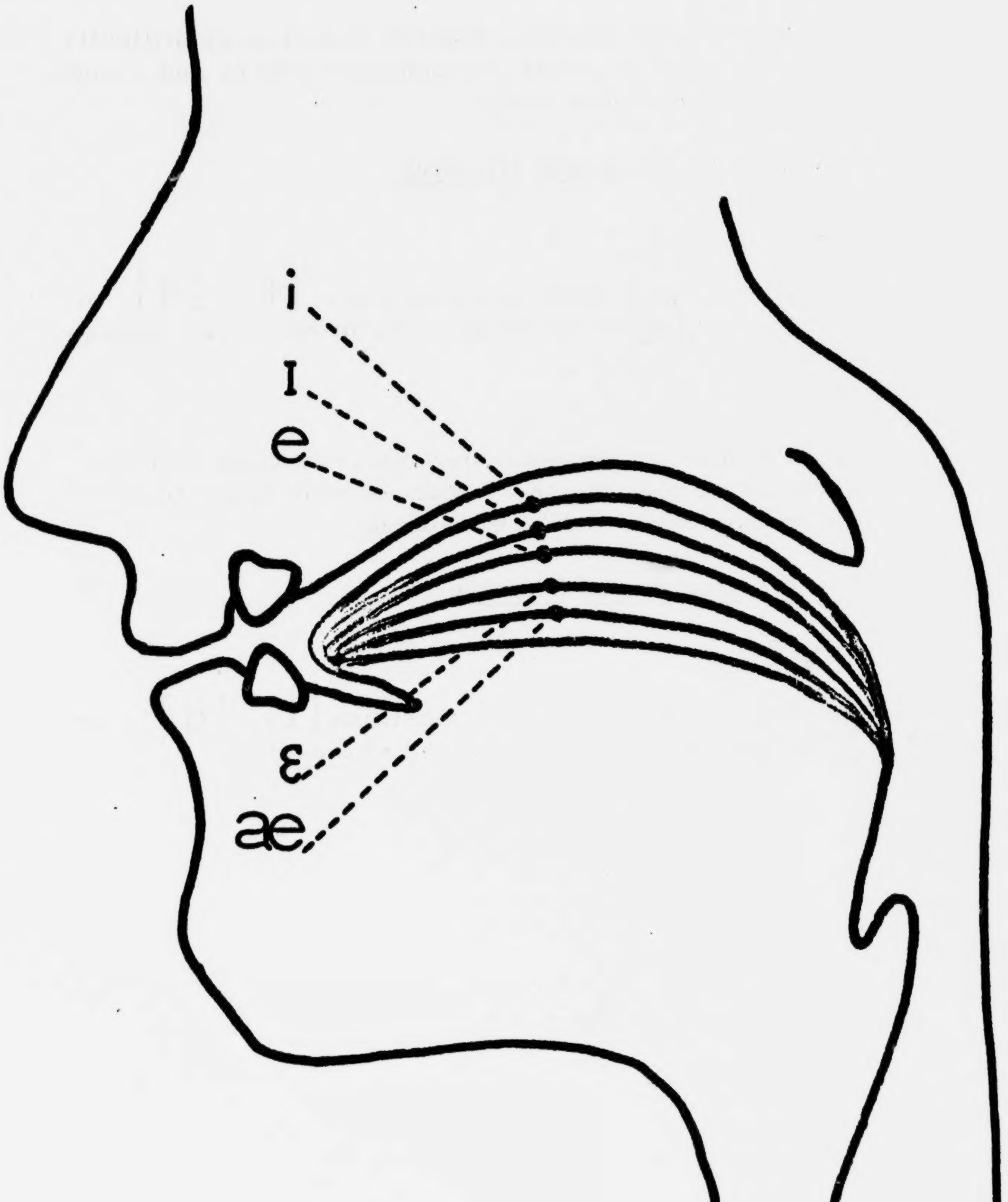
Stick your tongue out between your two front teeth with the top of the tongue touching the bottom of your upper teeth. The air stream itself makes the sound.

[ð] (those) Voiced lingua-dental fricative

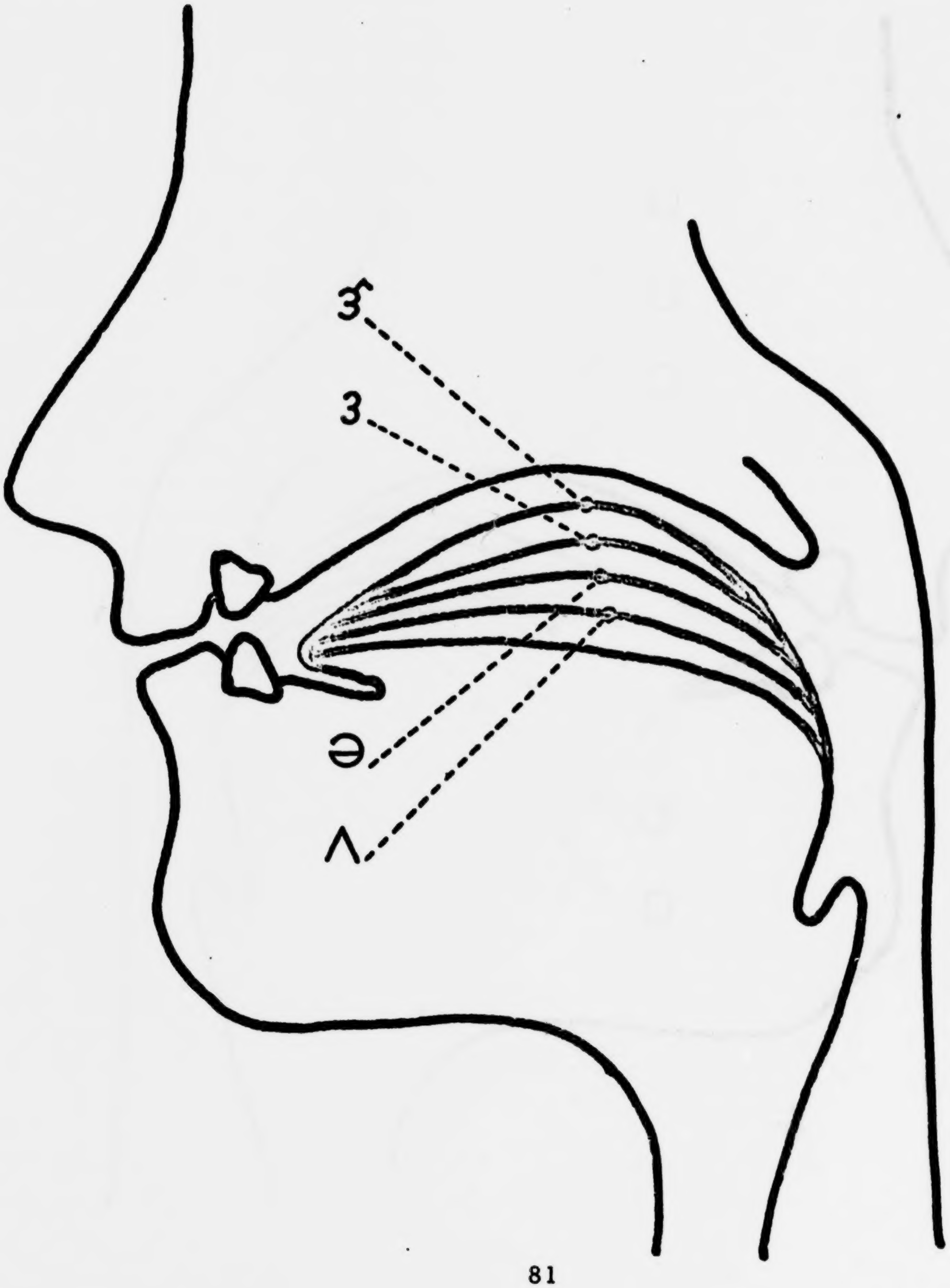
Difficulties:

The Spanish speaking child may substitute [t], [d], or [θ] for this sound. (tose instead of those)

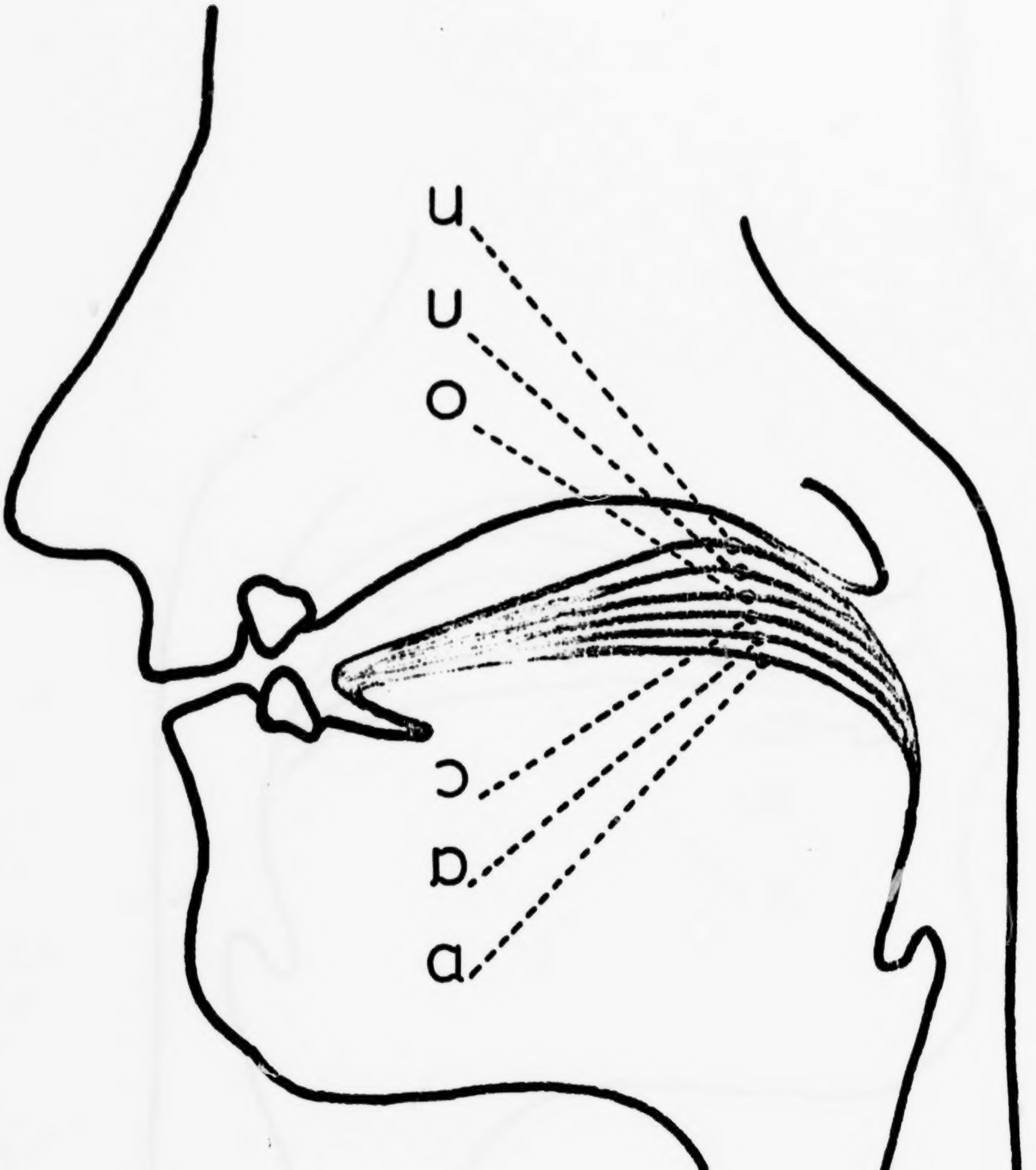
ENGLISH VOWEL PLACEMENTS



ENGLISH VOWEL PLACEMENTS



ENGLISH VOWEL PLACEMENTS



Vowels

[ɪ] High front vowel, bit

Difficulty: The Spanish speaking child cannot hear or reproduce it many times.

Instructions: Drop the front of your tongue one notch (about 1-1 1/2"). Repeat after the model.

[æ] Low front vowel, cat

Difficulty: In hearing and being reproduced by Spanish speaker.

Instructions: Lower the front of your tongue about three more "notches"--one past the [ɛ] in papel. [æ] cat

[ɝ] Mid central vowel, bird

Difficulty: The Spanish speaker cannot hear and reproduce.

Instructions: Work with pupil on [ɜ] alone and [r] alone then work on blend with pupil.

[ə] Low central vowel, player

Difficulty: Spanish speakers do not have the sound in their language.

Instructions: Relax central portion of tongue with no muscular tension anywhere in mouth. This is a "relaxed" sound.

[ʌ] Low central vowel, cut

Difficulty: Totally foreign to sound system of Spanish.

Instructions: Lower the middle portion of tongue, but tighten mouth muscles a little more. The sound in English is found only in stressed positions.

[ʊ] High back vowels, full

Difficulty: Foreign to Spanish.

Instructions: Drop back of tongue one position from [u] in tú.

[o] High middle back vowel, goat

Difficulty: Spanish speaker's tendency to eliminate any glide.

Instructions: None necessary--slight distortion will not impede understanding

[ɔ] Low middle back, all

Difficulty: No such sound in the Spanish language.

Instructions: Drop or lower back of tongue as well as front and round lips.

[ɑ] Lowest mid back, father

Difficulty: This sound is made lower in the mouth than the Spanish [ɑ] . The Spanish speaking pupil will tend to produce it more like the New England [ɒ] --Boston.

Instructions: Drop the back of tongue in mouth.

The phonetic descriptions are for the teacher only. Such technical terms should never be used to the students. Suggestions in presenting problem sounds to the student are as follows.

Sounds should be fun both for students and teacher. Each problem sound should be given a name. For example--the paired sounds may be called twins or twin sounds, one noisy (voiced) and his twin quiet (voiceless). Here is a list of the sound twins.

1. [s] is the Sammy Snake sound.
   [z] is the bumblebee sound.

2. [f] is the spitting cat sound.
   [v] is the airplane sound.

3. [K] is the coughing crow sound.
   [g] is the frog sound (or Indian baby's sound)

4. [t] is the small drum sound.
   [d] is the big base drum sound.

5. [θ] is the tattle tongue sound.
   [ð] is the windmill sound.

6. [p] is the blowing out candle sound.
   [b] is the baby sound.

As each sound is presented and given a name such as "Sammy Snake," a poster with a picture of a snake should be shown to the students. Thus they receive auditory and visual clues. The teacher may instruct the students as follows:

> Close your eyes and listen carefully to this sound: ssssss, ssssss, sssssss. Now open your eyes. What do you know that makes this sound? (She holds the picture of the snake before them). Of course, someone who already knows English will answer snake. That's right--let's name this sound ssss, the Sammy Snake sound. Watch me make the sound for you--ssss. See how my teeth are together! Let's all try it together. Be careful not to let your tongue peek at all. When I show your group the picture of Sammy Snake, make his sound.

Every sound can be given a name which the children recognize and a poster drawn to represent it. Soon the pupils learn to identify a sound only by the name of the sound, by the picture representing that sound, or by the position of the lips and tongue as the sound is seen but not heard. They will be able to interrelate all these factors with the auditory impression of the sound.

After the troublesome sound has been presented individually, the teacher should develop pupils' ability to identify the sound in words. The following technique is an example of an activity designed to help the pupils identify the problem sound in words.

> Do you remember the Tattle Tongue Sound? (th, voiceless) Let's all stick our tongues out at this silly Tattle Tongue and make this sound. Be sure to blow. th [θ]. Good, now see if you can hear this sound in words. I will say a word and if you hear the Tattle Tongue Sound in it, clap your hands. Thank, did you hear the th sound? (Note to

teacher: don't name the letters; simply make the sound.)
Good, listen again--thin; good--almost all of you clapped
that time! Dog, good, no Tattle Tongue sound in that word.
One more--thick, good, everybody clapped.

The sequence of activities for retraining of correct sound production is as follows:

1. Activities to isolate the new and troublesome sound.

2. Activities to saturate the child with the sound until he hears it in any sequence of sounds.

3. Activities to help the pupils identify the incorrect sound or sounds which are often substituted for the correct sound.

4. Activities to enable the pupils to discriminate between the correct and incorrect sounds.

These first four steps are primarily concerned with ear-training to enable the student to hear the strange sounds of the target language. Games and sound plays designed for ear-training will enable the pupil to hear, and eventually reproduce, the strange sound.

When he hears and reproduces the strange sound, the following activities should be planned:

5. Activities for strengthening pupil's control of the sound.

6. Activities to enable the pupil to use the new sound consistently in conversation.

ARITHMETIC, GRADES 1-8

Arithmetic for migrant children provides a balanced mathematics foundation geared to the functional needs of these children. Sequence of beginning levels is adjusted to the child's ability in communication. (Example: language and vocabulary emphases precede meanings and concepts of numbers.) Computation skills may be developed early because computation acts as a common vehicle of communication. Expectations for pupils are kept low in the beginning levels; as the child achieves communication skills, he can progress more rapidly.

Content in the program is a modified version of the course descriptions specified for the nine-month school program in Bulletins 617 and 615. Content used is to be developed into levels not tied to grade lines. Teachers plan instruction and pupil progress (evaluation and recording of progress) around each level. In some cases, two levels may be studied in parallel. Mathematics units are to be developed around experiences of children, while vocabulary and skills are to be made functional to their way of life. Applications of the content chosen should come from surroundings or situations familiar to the child; they should reinforce language arts and social studies vocabulary. The attitude of discovery or of curiosity is to be fostered whenever possible.

Textbooks selected may determine the sequence. Working with Numbers, Books 1 and 2, Steck Co., are recommended for levels one-twelve. Any of the state adopted textbooks regularly used for grades 3 through 8 may be used for teaching the corresponding levels when supplemented with comprehensive local curriculum guides.

Curriculum guides should specify what parts of the textbook are to be used in the classroom. In general, stated problems using terms not in the pupil's sphere of knowledge should be restated so the examples will be objects or things of common knowledge to the pupil. Special emphasis should be placed on understanding the language of the problem. Passing out duplicated sheets and using transparency or opaque projection are suggested methods to be used for rewording stated problems. It is suggested that problem solving be incorporated into every level, rather than being confined to those levels giving it special emphasis.

Every opportunity should be used to tie arithmetic into the other curriculum areas. Arithmetic instruction is to be correlated with the language arts instructional program in that certain arithmetic levels correspond to each level in the language arts program. The pupil cannot progress in arithmetic beyond his abilities in the language skills. Arithmetic drills may be used as a device for reinforcing language arts instruction. The aural-oral technique may be used in early stages of language usage and vocabulary development.

Many levels of arithmetic instruction may be correlated with the social studies program. (Examples: distances-map; temperatures-climate). Arithmetic and science have in common ideas such as: measuring rainfall-weather; liquid measure-milk. In levels that correspond with spelling skills in language arts, spelling of arithmetic words may be required.

Arithmetic may be correlated with art as in scale drawing (scale of 1 mile represented by 1 inch; ideas of proportion). Use of arithmetic in music is found in note values (whole, fractional), rhythm (equal note values) measure (time signature). Certain arithmetic games and rhythmic activities tie arithmetic into the physical education program (as counting, clapping hands, or bouncing a ball in rhythm or to music.)

From modern mathematics we may borrow ideas such as patterns, structural arrangements, games, cross number puzzles, "what is my rule?", and other activities. It is suggested that terminology be compatible with textbooks and standardized tests that are in use. Too much new terminology is confusing.

In making plans for instruction in arithmetic, it is necessary to pace the teaching-learning process in proportion to the shorter attention span of pupils. Such pacing should occur within one period as well as in the daily plan where two arithmetic sessions are held. This variety within the instructional periods may be achieved by providing for supervised study, oral arithmetic, use of concrete objects such as counting frames, number games and rhythmic games, measuring experiences, use of patterns of numbers, cross-number puzzles, and other activities (paper folding, using cut outs and stencils, and using musical multiplication).

A plan for reporting pupil progress is needed. The local school might design a score sheet or record sheet that can move with the migrant student. Some procedure for indicating the pupil's progress by levels is desirable. Evaluation and testing should be a part of the teacher's instructional plan.

Content extracted from Course Descriptions in Bulletin 615 and 617

PROPOSED LEVELS	Grade Level	English Language Arts Level
Level One	1	1-2

Symbolism (language)

- Readiness activities
- Language emphasis with much oral practice (It is assumed that 85%-90% of these children do not speak English; therefore, the beginning of the Arithmetic Program must be learning to use the language.)
- Listening when the teacher reads
- Vocabulary; this has two aspects
  - A beginning general vocabulary
  - The vocabulary needed for arithmetic Vocabulary selection anticipates needs of pupils and is correlated with the language study.
- Vocabulary of quantity (more, more than, less, less than, big, too big, little, too little, halves, tall, taller than, and simple estimation)
- Symbols (numerals, +, and many names for a number) used to indicate certain things (may be delayed until Levels two and three)
- Variety of concrete materials for language and number ideas
- Other ideas

Level Two	1	3-4

Numbers (May begin before completion of Level One)

- Meanings and concepts (variety of concrete objects, groups of objects, pictures, and experience charts)
- Oral practice (language emphasis) and counting experiences (use aural-oral drills combining language and number concepts)
- Recognition and selection of groups
- Pattern drills
- Reading and writing numbers may be used as children learn these skills following aural-oral drills and experiences

	Grade Level	English Language Arts Level
. Contact with library books (arithmetic and other activities, experiences, and number games . Other ideas		
Level Three Operation of Addition . Readiness activities . Vocabulary and symbolism (in keeping with textbook being used) . Idea of combining and other preparation for addition . Addition facts 1-10 (or a portion thereof) . Doubles related to counting by twos . Other ideas	1	4-5
Level Four Operation of Subtraction . Readiness activities . Vocabulary and symbolism (in keeping with textbook being used) . Idea of separating and other preparation for subtraction . Subtraction facts 1-10 (or as in Level Three) . Relate subtraction to addition . Other ideas	1	5-6
Level Five Measurement (functional) recognition and experiences: . Money--coins, dollar bills... . Time--clock, hour, morning, noon, night, today, tomorrow... . Calendar--day, week, today, tomorrow... . Weight--scales, pounds... . Linear--ruler, yardstick (yards of cloth)... . Quantity--dozen pairs, all, both... . Liquid Measure--pint, quart, cup..	1	5-6

	Grade Level	English Language Level
. Fractions--one-half of a whole... --dividing a whole into several parts --dividing a group (8) into several parts . Other measures		
Level Six Writing Numbers . Review of language and symbols . Oral practice and preparation . Activities involving written numbers (related to writing experiences in language study) . Evaluation and testing over Levels One-Six . Other ideas	1	5-6

NOTE: Due to the language problem, the first six levels may require more than one school year. Classes will move in Arithmetic in relation to ability and communication skills.

	Grade Level	English Language Level
Level Seven Symbolism and vocabulary needed for arithmetic . Oral practice to maintain skills . Written practice (largely developmental) . Review and/or reteach as needed . Other ideas	2	7
Level Eight Numbers . Experiences in reading and writing numbers (writing from dictation and from printed copy) . Counting by 2's, 5's, and 10's; relate to money values and to multiplication readiness . Meaning of place value (use of concrete devices such as hundreds board) . Need for zero as a place holder (use of concrete devices showing units, tens, hundreds) . Other ideas	2	7-8

	Grade Level	English Language Arts Level
Level Nine	2	7-8

Operation of Addition

- Reteach Level Three if necessary
- Vocabulary and symbolism (compatible with textbook being used)
- Addition facts 1-20
- Three addends, doubles
- Coin recognition and vocabulary
- Count money (use counting by 5's and 10's)
- Skill maintenance and development
- Other ideas

	Grade Level	English Language Arts Level
Level Ten	2	7-8

Operation of Subtraction

- Reteach Level Four if necessary
- Idea of separating
- Vocabulary and symbolism
- Subtraction facts 1-20 (to be correlated with Level Nine)
- Coin counting and valuation
- Making change
- Skill maintenance and development
- Other ideas: number stories
  2+3-1
  tree (as for ten)

- Many names for a number (combinations up to 20)

Level Eleven

Measurement

- Reteach Level Five and extend these experiences
- Linear (also maps and mileage)
- Use fractional parts of measuring units
- Activities in measuring objects
- Simple applications using measurements from the child's environment
- Estimation
- Other ideas: simple chart and graph reading
  cutting paper or drawing line as an estimate

	Grade Level	English Language Arts Level
Level Twelve Writing Numbers, Vocabulary, Comulative Review, and Evaluation NOTE: When Levels are compatible with the third and fourth grades, activities should provide oral arithmetic, supervised study, and number games and activities with concrete objects in the second daily arithmetic period. Other activities (rhythmic games, measuring) are not to be eliminated.	2	8
Level Thirteen The Number System . Use of written numerals to express a follower of any number in the system . Review and reteaching of Level Eight . Activities and experiences involving horizontal and vertical addition and subtraction ideas.	3	9
Level Fourteen Addition . Learning about groups . Putting groups together (cross number puzzles) . Carrying from one's place (use term "regrouping" only if it will not confuse pupils) . Carrying from ten's place (use devices and concrete objects) . Add two-place to three-place numbers . Adding three numbers in a column . Use of regular and irregular colums . Many activities for skill development and reinforcement are needed	3	9-10
Level Fifteen Subtraction . Learning about taking away from groups . Finding differences . Estimating, checking by addition . Borrowing across zeros and double zeros		

	Grade Level	English Language Arts Level
Level Sixteen Introduction to Multiplication and Division . Relation of multiplication to addition . Several groups forming a product . Doubling . Presentation of multiplication combinations through 36 . Multiplication of two-and three-place numbers by a one-place number using zeros . Division as a short method of subtraction . Relation of division to multiplication . Even division and uneven division (Use term "remainder"; activities to stress uneven division) . Relating fractions to division		
Level Seventeen Measurement (Use many activities and measuring experiences) . Length--ruler, yardstick . Liquid--purchased containers or milk cartons . Temperature--day, night, body temperature . Quantity (Dozen)--as needed in buying for the family . Time--day, week, month, year . Weight--pounds of cotton picked; purchase of pound of coffee	3	9-10
Level Eighteen Problem Solving-Oral and Written . Activities utilizing grocery advertisements and a catalog for ideas, prices, and comparisons . What facts are stated in the problem? . What facts are implied? . What questions does the problem ask? . What process will be required to obtain an answer? Estimation; and "Is this a reasonable answer?" . What kind of answer is needed? . Pupils create problems NOTE: Introduce problems related to experiences and the environment of the pupil. Do not neglect mental arithmetic.	3	10

	Grade Level	English Language Arts Level
Level Nineteen Cumulative Review and Vocabulary . Evaluation and testing of Levels Thirteen-Nineteen	3	10
Level Twenty The Number System . Extend understanding to six-place values . Meaning of zero . Ordinals through thirtieth . Roman numerals through XV . Comparisons and contrasts of numbers Compare using measurements:1 foot=12 inches Contrast by differences and quotients; How much taller is Joe than Jim? 60-57=3 inches You have 25 cents; I have 5 cents. How many five cent candy bars can each buy? $\frac{25}{5}=5$; $\frac{5}{5}=1$	4	11
Level Twenty-one Addition and Subtraction . Review and extension . Extend use of regular and irregular columns . Estimating and checking answers	4	11-12
Level Twenty-two Multiplication and Division . Reteach meaning of multiplication and division . Extend through 10's; work for speed and accuracy . Two-and three-digit multiplicand with one-digit multiplier . Division of four-place numbers by one-place numbers . Division with zero and a quotient . Division with remainder . Checking answers . Division as a means of comparing	4	11-12

	Grade Level	English Language Arts Level
Level Twenty-three Fractions . Reteach meaning and use of fractions . Compare sizes of fractions . Adding and subtracting fractions with like denominators	4	11-12
Level Twenty-four Geometry . Recognition of simple geometric forms . Reproducing some of these . Activities such as paper folding and making mobiles	4	11-12
Level Twenty-five Problem Solving . Reteach technique . Emphasis on technique, estimation, and checking	4	12
Level Twenty-six Decimals . Emphasize skill in making change . Addition; subtraction; multiplication; and division of dollars and cents . Many practical problems related to consumer buying, wage-earning, etc.	4	12
Level Twenty-seven Cumulative Review Evaluation and testing of Levels Twenty-Twenty-seven	4	12
Level Twenty-eight The Number System . Meaning, reading, and writing, of numbers through millions; correct spelling required . Extension of place value . Reteach meaning of zero . Roman numerals as far as needed . Rounding off numbers and estimating answers . Activities that use some large numbers	5	13

	Grade Level	English Language Arts Level
Level Twenty-nine Operations: Addition and Subtraction, Multiplication and Division . Maintenance of skills . Extension of addition, subtraction, multiplication (11's and 12's) and division emphasing estimation, checking, and oral practice . Some experience with mental arithmetic and with teacher-dictated problems	5	13
Level Thirty Fractions and Mixed Numbers . Reteach meaning and use of fractions . Compare fractions . Extension of concepts to include mixed fractions and improper fractions . Reducing fractions . Changing fractions to whole or mixed numbers . Fundamental operations with fractions and mixed numbers	5	13-14
Level Thirty-one Problem Solving . Review of technique . Extension of problems to types with more than two steps	5	13-14
Level Thirty-two Measurement . Kinds of measures and tables . Liquid, dry, and linear measures . Time and temperature . Use many practical applications (yards, cans of food, cups, measurements of lumber and other vocational items)	5	13-14
Level Thirty-three Decimals . Maintenance of skills . Relation of decimals to common fractions . Place value	5	14

	Grade Level	English Language Arts Level
. Extension of skills in basic operation . Develop practical, functional problems . Relate to consumer needs (cost of using money; loans; installment buying, carrying charges)		
Level Thirty-four Scale Drawing . Meaning and use . Relate to simple bar graphs, line graphs and pictographs (comparison)	5	14
Level Thirty-five Cumulative Review . Evaluation and Testing over Levels Twenty-eight-Thirty-five	5	14
Level Thirty-six The Number System . Review of meaning of numbers in terms of place value . Review of the zero concept . Meaning, reading, and writing of numbers through billions . Rounding large numbers	6	15
Level Thirty-seven The Fundamental Operations . Maintenance of basic skills . Extension of oral practice . Extension of all operations to larger numbers	6	15-16
Level Thirty-eight Common Fractions . Review of entire previous study of fractions . Extension of fundamental operations with fractions . Drill using mixed numbers . Conversion of mixed numbers to improper fractions	6	15-16

	Grade Level	English Language Arts Level
Level Thirty-nine Decimal Fractions . Review of entire previous study of decimals . Extension of fundamental operations with decimals . Rounding off . Relations of per cents to common fractions and to decimal fractions . Many problems related to rate of interest, carrying charges, discount, and so on	6	15-16
Level Forty Measures, Denominate Numbers, and Problem Solving . Extension of reference measures . Use of units of square measure as needed for practical usage . Operations with denominate numbers related to consumer buying . Practical problems using common fractions and decimal fractions . Review techniques, estimation, and checking procedures . Extension of types of problems to include perimeters and areas of various geometric figures . Use of tables in solving problems	6	15-16
Level Forty-one Geometry and Scale Drawing . Review of geometric forms Activities such as making mobiles or cutouts for Christmas tree . Relate to formulas and measures of area and perimeter as needed for practical usage . Review of scale drawing related to art . Extension of scale drawing as in photography, cartoon drawing, and advertising . Reading maps drawn to scale and figuring mileages	6	16

	Grade Level	English Language Arts Level
Level Forty-two Cumulative Review . Evaluation and Testing over Levels Thirty-six--Forty-two	6	16
Level Forty-three The Number System . Review or reteach Level Thirty-six . Use activities that will incorporate library books and references on history of counting and writing numerals . Prime and composite numbers (Readiness activities and patterns) . Emphasize mental arithmetic	7	17
Level Forty-four Operations and Problem Solving . Review of operations using common and decimal fractions . Emphasis on .. reading a problem .. understanding the problem .. making a plan to solve the problem . Estimation and checking . Activities and problems using practical measurements (Examples: labels on cans; price per pound of foods such as meat, beans, and bread; price per yard of fabric) . Emphasis on simple mental operations	7	17
Level Forty-five Consumer Arithmetic . Banking . Insurance . Taxes . Wages and the family budget . Borrowing money (sources and cost) . Comparing merchandise and comparing prices . Installment buying	7	17
Level Forty-six Geometry, Scale Drawing and Cumulative Review	7	17

	Grade Level	English Language Arts Level
. Simple constructions		
. Relate to art (church windows)		
. Activities that encourage creativity (such as coloring an original design)		
. Relate scale drawing to simple proportion (as in floor plan)		
. Relate scale drawing to city map or school campus drawing		
. Relate scale drawing to simple graphs		
. Cumulative Review		
Evaluation and Testing Levels Forty-three--Forty-six		
Level Forty-seven	8	18
The Number System		
. Review or reteach as necessary		
. Readiness for algebra (if needed)		
.. sets of numbers on number line (natural, whole, rational, integers)		
.. terminology readiness		
.. inverse operations		
.. primes, composites, and factors		
.. simple open sentences		
(____ + ____ = 10)		
(____ + _3_ = 10)		
(_7_ + ____ = 10)		
(_7_ + _3_ = __)		
Level Forty-eight	8	18
Operations and Problem Solving		
. Review or reteach Level Forty-four		
. Use many practical problems incorporating decimals, common fractions and daily and vocational measurement needs		
Level Forty-nine	8	18
Consumer Arithmetic		
. Review or reteach Level Forty-five		
. Kinds of taxes		
. Texas sales tax		
. Federal income tax forms		
. Social Security		

	Grade Level	English Language Arts Level
. Kinds of insurance . Hospitalization . Sources of loans . Cost of owning a car or owning a home . Practical problems related to each topic studied (consult a General Mathematics or Business Arithmetic for types of problems; place these in proper context to meet needs of pupils)		
Level Fifty Cumulative Review . For pupils preparing to enter algebra, the review should cover Levels Forty-three--Forty-nine . For other pupils, the review may cover Levels Forty-seven--Forty-nine	8	18

LIST OF ITEMS THAT MIGHT BE HELPFUL TO TEACHERS

Paper (construction, poster board, foil, etc. for cut-outs and paper folding)

Duplicating machine with ample supply of stencils and paper

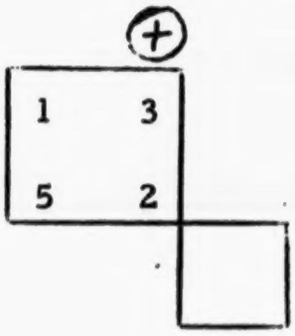
Measuring devices (rulers, yardsticks, tape measures, cartons or containers for liquid measure, scales, thermometers, clock face)

Flannel board and felt or magnetic board and metal discs

Drawing instruments for student use

Patterns (star, diamond shape) and ideas for paper folding

Ideas for pass-out sheets that use few words. Examples:



1 → 3
4 → 6
5 → 7
10 → ___
3 → ___

SOURCES OF GAMES AND ACTIVITIES
(Annotated)

The Arithmetic Teacher, January, February, March, April, May, 1963 issues.
Includes games and activities. See section called "Focal Point."

Bengamini, David, *Mathematics*, LIFE Science Library.
A collection of materials containing pictures, figures and mathematical experiments.

Brann, Esther, *Five Puppies For Sale*, 1948. Macmillan.
Indicates comparative size as well as addition and subtraction concepts.

Blough, Glenn, *Wait for the Sunshine*, 1954. McGraw Hill.
Emphasizes ideas of measurement and comparison.

Carlson, Bernice W., *Make It and Use It*. 1958. Abingdon Press.
A collection of easy-to-do projects; some utilize measurement.

Corle, Clyde G., *Building Arithmetic Skills with Games*, 1959. F. A. Owen Publishing Company.
A collection of rhymes and arithmetic games separated for primary, middle, and upper grade levels.

Crocker, Betty, *Betty Crocker's Cook Book for Boys and Girls*, 1957. Simon and Schuster.
Supplies practice in use of measurement and operations.

Fowler, H. W., *Kites*, 1953. Ronald Press.
A detailed description of kites. Usable for projects and concepts of measurement and comparison.

Freeman, Mae and Ira, *Fun with Figures*, 1946. Random House.
Suggested experiments using geometric models.

Hoberman, M. A., *All My Shoes Come in Twos*.
A story in rhyme that is adaptable to number activities.

Johnson, Donovan, *Paper Folding for the Mathematics Class*, 1959. National Council of Teachers of Mathematics.
A collection of patterns, activities, and ideas relative to paper folding.

Kraitchik, Maurice, Mathematical Recreations, Dover, Chapter 7 Magic Squares.
Designs and ideas for developing magic squares.

Leeming, Joseph, More Fun with Puzzles, 1946. J. B. Lippincott.
A collection of number puzzles and other activities involving coins, counters, and matches.

Massoglia, Elinor, Fun-Time Paper Folding, 1959. Grosset and Dunlap.
Japanese methods of paper folding that emphasize comparison and shape.

O'Brien, Katharine E., Successful Devices in Teaching Geometry, 1955. J. Weston Walch.
A collection of activities, projects, and techniques relating to geometric concepts.

Reed, Mary and Osswald, Edith, The Golden Picture Book of Numbers; What They Look Like and What They Do. 1954, Simon and Schuster.
Ideas of size of groups, time, money, and comparative sizes of objects that are adaptable to activities.

Russell, Betty, Big Store, Funny Door, 1955. Albert Whitman.
A trip through a supermarket, using ideas of number, operation, and measurement.

Schlein, Miriam, Shapes, 1952. William R. Scott.
Ideas and patterns to develop vocabulary concerning shapes (round, square, line, curve, long, tall, etc.)

Turney, B. L., Geometry Teaching Aids You Can Make, 1958. J. Weston Walch.
A collection of instructions for making teaching aids inexpensively. Many are suitable or adaptable to the elementary schools.

BIBLIOGRAPHY

Hardgrove, Clarence E., The Elementary and Junior High School Mathematics Library, 1960. National Council of Teachers of Mathematics.

Potter, Mary, Mathematics to Use, Ginn and Company

Potter, Mary, Education in Mathematics for the Slow Learner, 1960. National Council of Teachers of Mathematics

Elementary School Mathematics, Books 1,2,3, Addison Wesley Publishing Company.

Math Workshop for Children, Levels A, B, C, D, E, F, Encyclopaedia Brittanica

Discovery in Elementary School Mathematics, Encyclopaedia Brittanica

Learning Center Program for Mathematics
A program devoted to use of concrete objects for development of number concepts.

Greater Cleveland Mathematics Program, K, 1, 2, 3. Science Research Associates.

Arithmetic, 3-8, Laidlaw Brothers

Seeing Through Arithmetic, 3-8, Scott Foresman Company,

Modern Arithmetic Through Discovery, 3-6, Silver Burdett.

SOCIAL STUDIES

Nature of the Program

The social studies program as considered here has these characteristics:

1. It is planned sequentially in at least two respects. (1) In the first stages, a foundation is established for vocabulary building and for learning that will be utilized in later developments. (2) It begins with home, school, and community areas and expands into larger geographical areas.

2. It does not lend itself to being broken down into narrowly defined levels within grades as do arithmetic and language arts.

3. It provides those situations in which teachers can engage an entire class at one time for instruction. Group work is engaged in at frequent times, but the work of the group is to gather information and ideas to share with the entire class. In this kind of situation a child can come to feel that he belongs to a group whose help is important to him and whom he can help in turn.

4. Its concepts are subject to being strengthened by extension and repetition from level to level. The teacher will consider the age, the maturity, and the experiences of the pupils, as well as their proficiency in understanding and speaking English, as to the time concepts to be introduced or repeated.

5. It is one in which information is gathered from many sources; in which skills are developed (reading skills, use of maps and globes, chart and graph reading); and especially one in which attitudes and appreciations resulting in behavioral patterns are developed.

6. Its content is highly correlative with other subject areas--language arts, science, health, and safety.

7. It is to be started only after children have proficiency in understanding and speaking English comparable to that described in the Preschool Instructional Program for Non-English Speaking Children.

General Appreciations and Understandings To Be Developed

1. Appreciation of citizenship in democratic nations, patriotism.

2. Appreciation of people whose contributions have been important in shaping the destiny of the community, state, nation, and world.

3. Appreciation for the worth of the individual and individual rights.

4. Understanding of ways to meet and solve problems and how to start again if failure has been experienced in attaining predetermined goals.

5. Understanding of ways to contribute services for the welfare of others.

6. Understanding of ways to improve standards of living.

7. Understanding of how all people seek satisfactions in relation to jobs, homes, food, clothing.

8. Understanding of how man adapts himself to physical and cultural environments.

9. Understanding of the relation of change to progress.

10. Understanding of how to generalize, how to draw conclusions, how to make comparisons.

Understandings Related To Citizenship, National

1. Democracy is a form of government that is carried on by representatives elected by the people who live under it.

2. Our nation, state, county, and community operate under the democratic form of government.

3. Americans have an invaluable heritage of freedom. American democracy is concerned with the importance of freedom, rights, and responsibilities of the individual.

4. American freedom means freedom of religion, of speech, and of the press. It includes the freedom of work, of education, of moving, of buying, of selling, etc.

5. Democracy in America provides equal opportunity before the law.

6. Maintenance of our way of life depends on us as individuals. We should keep well informed about our government. We carry the obligation of being willing to abide by majority rule and for the protection of the rights of the minority. We are obligated to obey the laws of our country. We should know the United States Pledge of Allegiance and its meaning, and facts about flag etiquette suggested in the following questions:

a) What is the proper method of paying respect to the flag during the ceremony of hoisting and lowering? b) How do we pay respect to the flag when it is passing by in a parade or in a review? c) What should be the position of the flag when displayed from a staff in a public auditorium, a church, or a public meeting place? d) Under what conditions can the flag be flown at night? e) When should the flag be flown at half-staff? f) What is the proper method of raising and lowering the flag to and from the half-staff position? g) In what position should the flag be when suspended over the middle of the street? h) How is bunting arranged when used for decorative purposes? i) What is the honor position for the flag? j) What are the positions of the flag when carried in a parade with other flags?

Understandings Related To Citizenship, State

1. The state of Texas, as we know it today, was brought about through the ingenuity, toil, and sacrifice of our forefathers.

2. Texas is one of fifty states combined to form the United States.

3. Our state has a democratic form of government. The head of our state is the governor. He is elected by the majority vote of the citizens of Texas.

4. The state provides public schools and supplies textbooks. We should keep well informed about our state government. We should pay our state taxes and vote. We have state elections to elect our state officials. We should obey the laws of our state. We should know there is an official salute to the flag of Texas, "Honor the Texas Flag of 1836. I pledge allegiance to thee--Texas, one and indivisible."

5. The capitol of Texas is located at Austin. We should know how Texas got its name. We should know our state tree, bird, and flower.

6. The largest city in our state is Houston.

Skills To Be Developed

Skills are to be developed along with the subject matter content. The social studies program should be closely related to the language arts program. Reading in the social studies subject matter should be an extension of reading in language arts, providing another source of material for reading practice. Specific attention may be devoted to:

1. Listening with understanding.

2. Speaking clearly and effectively.

3. Reading and writing with facility, clarity, and planned sequence.

4. Reading maps and globes, charts and graphs.

5. Extending word recognition or word attack skills whenever necessary.

Procedures

1. Give opportunity for as much talk as the child's oral vocabulary will allow, but anticipate later vocabulary needs and use this vocabulary also in talking or reading to children. Emphasis should be given to discussion, drawing conclusions and generalizing, exchanging ideas, impressions and experiences appropriate for and relating to the content studied.

2. Use as many concrete materials as possible: flat pictures, charts, maps, globes, filmstrips, films, transparencies.

3. Plan many group projects in which children may talk together and participate in dramatizations and team learning activities.

4. Provide field trips into stores, bakeries, canning factories, etc. so that children may have vocabulary-building experiences.

5. Provide, when children can read, for much reading and interpretation of thought and writing of outlines and summaries.

GRADE 1

STUDY OF NEAREST ENVIRONMENT	
Home and Family	Use collections of pictures, field trips, ideas from basal reading stories, health and safety lessons, films, filmstrips, weekly readers, posters, picture books. Make experience charts
Emphasize that each family member affects the family unit	
A house becomes a home because of the part each member plays in family life.	
Each member is important and should give and take	
School	Classroom discussion
Emphasize that a school is a place for learning and that each person affects the classroom unit	
Respect must be shown for other people and their belongings	
Rules are necessary	
Neighborhood	
Lead to observation and study of immediate neighborhood and the implications of various families living near each other	
Americanism	Use United States and Texas flags
Current news	Use any suitable weekly reader

GOALS AND CONCEPTS

The objectives of a social studies program at any grade level are all directed toward the ultimate goal of developing citizens capable of functioning effectively in a democratic society. As your classroom fills with little strangers, you, the teacher, soon locate those who need security and affection, those a little short on mental equipment, those with enriched or impoverished backgrounds, and those with all different stages of communicative abilities and readiness for learning. These children need to understand and be able to use English. They are not stupid, and will learn by the same mental process as other children.

You want all of them to be and become good citizens. You want them to be tolerant and considerate of others and, yet, to make the most of themselves. You want them to have and be able to express ideas of their own. You want them to have certain attitudes toward personality traits of human beings. You want them to respect the worthwhile. You want them to feel important.

Before they come to school, parents and other relatives have already introduced pupils to some social living concepts. They are already aware of some restrictions, rewards and punishments for their social behavior. You cannot know all of these. You do know they vary greatly.

FIRST GRADE

I. We take advantage of previous experience and begin with the social situations with which the child is familiar--the Home and Family. The child realizes that any home is the center of family life and that all members must contribute to make it a happy and comfortable place.

Major Concepts

1. Each family has a common last name (Garcia). Each person has a name by which he is called, in addition, that shows relationship or tells first name (Mother, father, uncle, brother, Emma, Juan, etc.).

2. I should be proud of my family for many reasons.

3. We all have to work. We all play. We are all important to others.

4. We should help others and let them help us.

5. We should be able to forgive and forget unpleasant things and disappointments.

6. We should have faith in and trust family members.

7. Different families have different homes to suit them.

8. When accidents happen, we get hurt or we are made unhappy.

9. We should try to keep healthy, and have concern for the sick.

10. A clean and attractive house and yard make family living happier and healthier. We can help.

II. The child comes to school and immediately has much to learn about his new environment--the people in it, the objects and things that are different from those at home, what one does and does not do with things and people to gain satisfactions. He learns to look, listen, talk, and read. He learns to count, to write, to find answers to his hundreds of questions. He learns to cooperate. He must learn how to come to school and go home safely and how to eat away from home. He learns there are times for work and times for play, and when he can and may do as he likes and when he must do as others want. He substitutes teacher at school for mother at home. But he is growing physically, mentally and emotionally, and children get tired and forget, though they really want to please others. No child wants to be an outcast, though some are selfish and some lack courage.

Major Concepts

1. We come to school rested after a good night's sleep; we have eaten good breakfasts; and we are clean and neat.

2. We start to school on time and take with us pencils or anything else we will need.

3. On the way to school we observe safety rules or behave ourselves on the bus.

4. We have respect for the property of others.

5. We wait our turn at the drinking fountain and do not touch our lips to the fountain.

6. We help keep the restrooms clean.

7. The teachers, principal, and school nurse are our friends. We have friendly visitors sometimes, too.
8. There is a time for work and a time for play. We cooperate at all times.
9. We get to do many things we like. Working and playing are both fun.
10. There are some things we should not do because they wouldn't be good for somebody else. We follow rules even in playing games.
11. At times we must follow the teacher's directions carefully, making the most of time, effort, and supplies.
12. The school cafeteria is a comfortable place to eat, and we should try to eat a little of everything and learn to like foods that are new to us. We like to bring lunch from home, too. Many children do.
13. We want friends, so we must be friendly.
14. We want a nice school, so we must help keep it that way.
15. We are thankful for our school and our chances to learn there.
16. When things go wrong, we try again.

III. The children are becoming more independent and yet more aware of necessary democratic behavior. They realize the importance of self and others.

They learn of holidays, seasons, weather, the names of days and of some months, and that clocks tell time. They know what it means to be weighed and measured, and probably know why the nurse gives them shots. They have experienced satisfactions from working, playing and singing together.

Among their learning experiences, scientific situations have been taught, mostly about plants and animals. How plants and animals contribute to people's happiness and well being is another part of the total social living program.

Major Concepts

1. Plants and animals serve people in many ways.

2. There are families in nature too.

3. Each kind of plant and each kind of animal go on producing more.

4. We can classify things of nature by putting "likes" together.

5. Some animals are pets and serve us by being friendly. We can enjoy them and must be friendly and help care for pets that depend on us.

6. Some animals live on farms, give us food and clothing, help with work and are taken care of.

7. Other animals live in zoos or circuses or are wild and take care of themselves.

8. Different animals have different habits, kinds of shelter and needs.

9. Plants grow from seeds and sprouts and need sunshine, water and food.

10. People, plants and animals live differently in cities from the way they do on farms.

11. There are differences in residential and business parts of town.

12. Farming is important. Business life is important.

13. Machinery and inventions help people live and work in cities and on farms. Inventions make home life easier. (Electrical appliances--What??)

Not all of the first graders will develop these concepts to the same degree and with the same interpretation, ability to understand, and ability to remember. Gaining stronger concepts is a continuous process and there is no strict dividing line among the grade levels. Many traits of enduring quality, though, are being formed at the first grade level. Attitudes as well as knowledge and abilities are important.

Suggestions for Procedures

The program in grades one and two will be highly directed by the teacher, who will serve as the main source of information. As there are no printed texts in social studies at these levels, the teacher should capitalize on all

of the possibilities inherent in the stories in the basal and supplementary readers and in news bulletins to bring out the social living concepts. There should be a great deal of oral discussion. Sight recognition should be developed for many of the words. The teacher will need to use the chalk board on which she should write summarizing sentences. Many library books, films and collections of pictures and filmstrips will be helpful in providing topics for discussion and summaries of important concepts.

The teacher may tell or read a story that illustrates a point she wishes to make. By asking questions afterwards, she can lead to generalizing statements.

Many of the major concepts can be developed into units. For example: "We help others andthey help us." How? Many of the concepts will be stressed by the teacher as she is establishing classroom rules or behavior patterns she is going to encourage or even insist upon. Coming to school on time, bringing pencils and paper, etc., and respecting other children's belongings are examples of this. Learning to take turns in discussions, working when they are supposed to, and playing when they are supposed to are other examples.

If the teacher just tells the pupils what to do and what will not be tolerated, she is giving them an experience of a sort, but it could not be called a lesson in social studies. It could become one when she engages the pupils in discussions of the reasons behind the necessity for punctuality, orderliness, honesty, respect, etc. By adroit questions she can lead children to state in their own simple language most of the real underlying principles of democracy.

The teacher should refer to the list of concepts very frequently for planning. They do not make up a sequentially-planned step-by-step series of ideas that the teacher takes one by one, day by day and teaches as she would a set of facts.

Do not take number one on Monday, number two on Tuesday and on down the line. Be selective. Add others. Combine several to plan an entire unit. Capitalize on thought content of stories in basal readers, science lessons, health and safety lessons, and any other classroom activities that are interrelated. Do allow children to express their ideas orally, in writing, and in art work.

GRADE 2

STUDY OF THE COMMUNITY

Give a better acquaintance with the entire community as a unit	In lieu of text, use materials as listed for Grade 1. Library books become more important. Simple biographies should be included. Make posters, pictures, constructed projects
Relate nearby rural area to urban area	
Study purposes of the segments that make a community, and the changes that are made as a city starts and grows	Start map drawing by locating streets and some major buildings in a community, in flat perspective.
Introduce study of basic needs of all people wherever they live	Provide practice in classifying and relating. Examples: A clothing store and articles found there. Classify foods into categories. Distinguish between mediums of communication and transportation
Develop more completely the meaning of citizenship with its responsibilities to others and the contributions from everyone	Use play situations. (Going to a show etc.) Engage in simple role playing in social situations set up by teacher, dramatized by pupils
Study flag etiquette and develop feeling of patriotism	Learn and sing patriotic songs
	Read about many people whose individual contributions have brought about some change that has meant progress or improvement in our culture
Current news	Use suitable weekly news reader

SECOND GRADE

The second grade child is no stranger at school. He has already learned far more than any adult can guess, more than he can express. We can hope he is already a good little citizen. He is ready for more of the same, because he likes the familiar and needs some repetition; but because he has lived a year longer in his environment, has some good and some not-so-good ideas, and his interests have widened, he too can widen his horizon. The challenge for new experiences must not be denied.

The teacher ascertains the readiness of her pupils and adapts the educational progress by pace, method and content to their proficiencies.

The second grader can now learn a little more by reading and interpreting pictures for himself, but continues learning by seeing, listening, hearing, feeling, doing, and being part of a social group. He has a wider vocabulary with which he expresses his thoughts. He has stronger understandings of classifications, sequence, consequences and how to achieve satisfactions. He has grown physically and his body serves him better. He is ready to learn more about himself and other people. He must learn many more English words. For many of the words, he has meaningful concepts, but has been hearing and using Spanish words for them.

Interest will lead him into studies of the neighborhood with which he is concerned. Science will still be closely correlated with social studies.

Major Concepts

1. Our neighborhood consists of places we go, and the places other people who live in and near our town go.
2. The work of many people living together makes life richer for all.
3. We have friends to help and comfort us, and we show such friendship to others.
4. The way each person lives and works is important to him and everybody in a neighborhood. Importance as individuals does not decrease because of religion, color, size, occupation or wealth, but is strengthened by the way one contributes.
5. Workers in the neighborhood provide food, shelter, goods and services. We can name, classify, and understand how these are used.

6. Workers who help the family use means of communication: telephone, mail, radio, television, newspapers, magazines, catalogues, movies.

7. Transportation is vital to carry people and products from one place to another.

8. The city serves the neighborhood with street maintenance, garbage collections, linemen, meter readers, policemen, firemen.

9. Churches, schools, the post office, stores, libraries, filling stations, factories, packing sheds, airports, depots and other buildings are places for goods and services.

10. There are places for entertainment like the school yard, the park, swimming pool, baseball diamond, football field, field house or gymnasium, and theater.

11. The neighborhood starts small and grows as more people join it.

12. As more and more people live close together, life becomes more complex and diversified. Independence and interdependence both increase as we grow older.

13. There are many more kinds of plants, animals, machines and inventions. They affect our lives.

14. Many things change as someone discovers a better way.

15. I am glad I live in or near my city in Texas and in the United States of America.

Suggestions for Procedures

The study of the community in the first grade has been concerned more with the child's own home, his street, his church and school, and the people with whom he comes into direct contact--family members, teacher, pupils, nurse, doctor, dentist, preacher, etc.

In the second grade, a progression is made to the study of a whole community with its residential area, business area and immediate outlying agricultural areas.

Some suggestions for development are:
What makes up a community?
How did it start and grow?
What are the purposes of each area?

1. Residential area--where people live
    - Houses, yards, streets, alleys
    - Difference between owning and renting
    - Differences in houses and what are in them
    - Choices based on likes, dislikes and what people can afford
    - How families work on home places to keep them clean, neat and attractive
    - How families help other people nearby
    - Meaning of "friends" and "good neighbors"
    - Who comes to our homes? Why?
    - How do we act when we have company?
    - What rights do families have with their own property?
    - What do people have to do to be careful of other people's properties?

2. Business area
    - What does it look like?
    - List all of the buildings that might be found and relate a purpose to each
    - Where are recreational places?
    - Do we act differently as we go different places?
        - A friend's home
        - Church
        - A library
        - A store
        - The doctor's office
        - A restaurant
        - The theater
        - The post office
        - School
        - The bus station
    - Who helps keep a business area clean and neat?
    - How do people communicate with others in a community? (Visiting, telephoning)
    - How do they know about what is happening locally and in the world? (Newspapers, radio, TV, etc.)
    - How do they get from one place to another?

3. Outlying vicinity
    - What happens about location of houses at the edges of a town?
    - What do the people do who live outside of the city limits?
    - Why do these people come to town?
    - Do they have an interest in the community?

4. For better living for everyone
    - List all of the jobs and workers we can think of
    - List all of the inventions you can that help all kinds of people in their work
    - How does an invention ever get started? (Select and study some inventions and the men and women who were responsible)

GRADE 3

THE EXPANDED COMMUNITY

Contrast urban and rural life both now and long ago	Use some second and third grade texts, films, filmstrips, library books
Study the various factors of man's basic needs	Plan many small units of work on a great variety of products to answer, "Where does this come from?" "How is it made?"
1. Food 2. Clothing	Do the same for a great many occupations for both men and women (make and illustrate booklets on the work of adults)
3. Shelter 4. Occupation	Invite resource people to give information as to occupations, city government, etc.
5. Social needs--Community (Study individual contributions made by inventors, community leaders, etc.)	Classroom discussions--keep vocabulary lists; gain sight recognition of many words. Engage in creative writing
Relate food, shelter and clothing to weather, seasons, places	Visual aids and classroom discussion
Review and extend study of transportation and communication	
Begin study of globe--directions, land, water, continents, equator, winds, etc.	Globe--and Map and Globe Handbooks for the teachers
Current world news	Suitably graded news reader

THIRD AND INTERMEDIATE GRADES

The so-called third grade migrant child is now undoubtedly one, probably two, and possibly three years educationally retarded for his chronological age. He is becoming aware of his over-age, and perhaps his over-size to be called a third grader.

He has traveled. He has learned something about working independently to take care of himself, and working in a group for the common welfare of a family or larger group. He has seen cities and farms. He has probably experienced periods of "feast" and "famine." In the former he learned about new delights accompanying a comparative higher standard of living. In the latter, he discovered that people can do without a lot of things in case of necessity.

He cannot converse in English, or write in any language, about even a fractional part of all that he knows and has experienced. His sight recognition of words is very limited.

His first need in school life was to acquire an English vocabulary. This need will still be paramount every step of the way. As further understandings are developed, the emphasis on oral vocabulary must be made. Each year's work should be planned so that the acquiring of a meaningful oral vocabulary will precede the expected later reading about (and the application of the simple concepts to broader understandings of) geography, history, citizenship, American heritage, conservation, government, sociology, and economics.

In order to give the foundation needed, and to make possible the use in the fifth grade of published geography books intended for the fourth grade, a slower paced but somewhat extended ordinary third grade program is suggested for coverage during the two years of the third and fourth grades for migrant children.

This can be seen more clearly by the preceding chart of a sequential program.

THIRD GRADE

Suggestions for Procedures

1. Develop information about community, relating urban and rural life and contrasting present and past methods of obtaining FOOD. Bring out the different workers involved in making many foods available.

   Name of town, state, nation
   Location of home related to town or city
   What kind of a place is it?
      The land--flat or with hills and mountains?
      Any rivers nearby? Other water?
   What is the weather like? (Seasons?)
   What do native plants mean?
   What native plants do we have?
   Why do these grow here?
   What other plants do we have? How did they get started? Why?
   Do plants provide us with all of our food?
   Where do we get the other things we eat?
   What did people who lived here a long time ago do about getting their food?
   Classify types of food
   Study many food products (Milk, bread, etc.)
      (Consult third grade texts and many library sources, films, filmstrips, etc.)

2. Develop information relative to clothing, relating it to past and present, for different occasions, and as to sources of clothing. Bring out the different workers involved in the making of many types of clothing available.

   What types of clothing do we wear? (When it is hot--cold--wet?)
      (For different occasions)
   Do we dress differently than people who lived here long ago?
   Do people in the country dress differently than people in the cities?
   How do some different workers dress?
   Of what materials are our clothing made?
   Where do we get these materials and how do they get changed into clothing? (Cotton, wool, rayon, nylon, rubber, leather, etc.)

3. Develop units on Shelter as for Foods and Clothing, only omit the contrast of past and present types of homes in the community.

a. What materials are used in building a house?
   Why aren't our houses all made alike?
   How do we get the materials for building a house?
      (Lumber, bricks, glass, nails, cement, etc.)
   Study the workers who produce the materials.
   Study the workers who build houses

b. What buildings are on farms? Why?
   What buildings are in cities? Why?
      (Stores, courthouses, churches, post offices, schools, libraries, factories, filling stations, etc.)

c. How do we get water to use in our homes?
   What is the source of your water supply?
   What has to be done to purify the water? Who pays for this?
   How is water carried away?

d. Why does our city have a Fire Department?
   Why does our city have a Police Department?
   Who is the manager on a farm?
   What decisions are made by him?
   Who manages a city? What do city managers do?
   How are they chosen? (Mayor, city manager, city council, etc.)

e. Introduction to map reading
   Draw a picture of your house and put in the rooms
   Draw a picture of your house and the streets you travel to reach your school
   Draw a picture of a town where you use little squares for buildings and locate some important buildings
   Draw a square for your city, and locate some neighboring towns on your map
   Look at a road map of Texas. Find your town

FOURTH GRADE

Emphasis at fourth grade will be on Texas geography. This is a departure from the traditional offering of social studies for this level.

One reason for this change grows out of a belief that this is a more logical and functional sequence. Another reason for this change is to give a pupil some basic concepts of Texas geography if he should drop out before seventh grade.

Some of the basic geographic concepts that should be emphasized are:

Elementary understanding of geographical features
Elementary understanding of natural and man-made resources
Through working with these concepts, skills in handling geographical materials such as globes, maps, charts, graphs, etc., may be developed

The following materials, related to this area, were developed by the Alice, Texas, public schools.*

TEXAS

I. Objectives

1. To have the children learn something about their state and its history
2. To learn about the geography of the state
3. To acquaint them with the natural resources, plants, animals and products of the state
4. To learn about the state flower, song, emblem, tree, bird, and motto
5. To acquaint them with their state government
6. To help them become better citizens
7. To help them learn to work together
8. To help them develop good study habits
9. To help them learn where to get information
10. To promote neatness, creativeness and orderly arrangement
11. To improve self-confidence in the children
12. To teach the child where he is in relation to the country and his surroundings
13. To correlate social studies with other subjects

II. Motivations

1. Put on display books about Texas
2. Show films on Texas
3. Have the children make an interesting notebook

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*Alice Independent School District, Elementary Social Studies, 1963.

4. Have them present an oral report to the class on current events in Texas, biographies, etc.
5. Decorate a bulletin board with outstanding pictures of Texas
6. Play some games related to Texas
7. Take field trips
8. Listen to recordings, see filmstrips and read pamphlets on Texas
9. Let the children make charts
10. Have the class make a mural, depicting some early aspect of Texas
11. Encourage each child to ask questions
12. Invite some guest speakers
13. Have dramatizations, "peep" shows, maps
14. Encourage the children to write letters for information

III. Teaching-Learning Activities

1. Make notebooks on the state flower, bird, state seal, tree, and some of the early history
2. Mount maps that show the main cities and towns of the state
3. Display the six flags under which Texas has been
4. Make maps showing the main products and natural resources of the state
5. Have children give oral reports about important cities or areas
6. Make a mural about the early missions of Texas
7. Read about the Texas navy and towns along the Rio Grande (Brownsville to Laredo)
8. Dramatize a play written by the children
9. Learn songs and dances about Texas
10. Have a resource speaker (native Texan) talk to the class
11. Make a diarama about some scenery of Texas
12. Place posters on bulletin boards
13. Have a book display available at all times
14. Collect Texas wild flowers
15. Study the preamble of the Texas Constitution
16. Show filmstrips on Texas
17. Make relief maps
18. Construct small scaled covered wagons
19. Modeling of farms

IV. Course Content

A. Vocabulary

1. Alamo
2. Bluebonnet
3. Canal
4. Cotton
5. Cattle
6. Petroleum
7. Oil
8. Rodeo
9. Valley
10. Cowboys
11. Windmill
12. Grain
13. Mission
14. Agriculture
15. Landscape
16. Freeway
17. Coastline
18. Capitol
19. Minerals
20. Climate
21. Natural reources
22. Trade
23. Industry
24. Product

B. Living in Texas in early days
1. History
2. Geographic boundaries

C. Living in Texas today
1. Products
2. Industries
3. Natural resources
4. Agriculture
5. Transportation
6. Trade
7. Coastline
8. Education
  a. Languages
  b. Customs
  c. Health
9. Climate

D. Correlations
1. Arithmetic
  a. Compare the size of Texas with that of another state
  b. Find the difference and sum of the train and bus fare between our town and some of the other cities in Texas
  c. Measure the distance between our town and some of the other cities in Texas
  d. Find how old some of the missions in Texas are.
  e. Find the number of counties in the state

2. Social studies
  a. Learn about some of the heroes of the Alamo
  b. Learn what the main products and natural resources of Texas are
  c. Learn how some of the Texas counties got their names
  d. Learn about the people who live in Texas
  e. Acquaint the children with governmental procedure in Texas
  f. Learn the state flower, bird, and tree

3. Science
  a. Make a wild flower collection
  b. Learn what plants and animals are adaptable to certain areas of Texas
  c. Find out how the Texas climate affects the people
  d. Study the weather by having a small weather station
  e. Take field trips to gather wild flowers
  f. Learn about natural resources in Texas
  g. Study about petroleum in Texas

4. Language arts
  a. Write a letter to the Austin Chamber of Commerce for information on Texas
  b. Have oral and written reports on Texas

    - c. Display books about Texas that children in their spare time may read
    - d. Collect poetry pertaining to Texas
    - e. Learn how to spell new words brought up in the study of Texas

5. Art
    - a. Have self-expression time to draw, paint, etc., about Texas
    - b. Make a mural about the missions in Texas
    - c. Make maps of different types

6. Music and dramatization
    - a. Learn songs and dances about Texas
    - b. Have class participation in rhythmical music, especially that of the Indians in Texas

7. Culminations
    - a. Make a display of the notebooks made by the class
    - b. Have an animal show of some of the common animals of Texas
    - c. Make a display of all materials collected about Texas
    - d. Have a book display

V. Evaluation

1. Give a short test to see how much the children have learned about Texas
2. Check the interest of the children about before and after the unit
3. Check their vocabulary, reading, and writing before and after the unit
4. Have they learned the value of working together?

VI. Available Teaching Materials

1. Filmstrips
    1. "Cotton"
    2. "The Horse"
    3. "Westward Expansion of the US-Texas"
    4. "Spanish Explorers of the New World, Balboa and Pizarro"
    5. "Southwestern States"
    6. "Texas Beef"
    7. "Oil from Earth To You"
    8. "In the Cotton Belt"
    9. "In Texas"
    10. "In the Southwest"
    11. "Drilling for Oil"
    12. "A Visit To a Ranch"
    13. "A General View of Texas"
    14. "Central North Texas"

    15. "South Texas Lowlands"
    16. "East Texas Timber Belt"
    17. "Southwestern Texas"
    18. "Northwestern Texas"
    19. "Davy Crockett"
    20. "Sam Houston"
    21. "Industry"
    22. "Agriculture"

2. Films
    1. "Cattle Drive"
    2. "Geography of the Southwestern States"
    3. "Reading Maps"
    4. "Sparky, The Colt"
    5. "Indians of Early America"

3. Tapes
    1. "Cabeza de Vaca and His Long Walk"
    2. "Pedro Carves a Window (Missions of Texas)"
    3. "They Signed for Texas"
    4. "They Fought for Texas"
    5. "Father of a Republic--Austin"
    6. "Revolutionary Raven--Houston"
    7. "Second Citizen of the Republic--Lamar"
    8. "Galveston, The Oleander City"
    9. "Cattle Empires"
    10. "Colonel and Congressman--Travis & Crockett"
    11. "The Big Governor"

4. Record--"Cowboy Classics" by Sons of the Pioneers

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GRADE 4

STUDY OF TEXAS AND TRANSITION TO THE STUDY OF U. S. AND WORLD	
Review of man's basic needs everywhere for food, shelter, clothing, etc.	Some information from third grade texts, library books, visual aids, units planned by teachers, and seventh grade texts on Texas for teacher reference
Establish differences between towns, cities, counties, states, countries, continents as political units	Planned unit by teachers. Classroom discussion
Study local region and Texas--geography and some history	Texas road maps. U. S. maps. Read stories about Texas pioneers. Study of background and nationality of people who settled in Texas. Planned units by teachers on areas of Texas to show major geography and industrial differences
Identify major types of conditions existing--in the world, desert, swamp, forest, plains, hilly and mountainous country, islands, coastal regions	Make and illustrate booklets for each type. Learn descriptive words. Summarize what life is like--what plants and animals might be found in each type--contrast with living in this community
Study land and water forms and how man has attempted to change them: bridges, dams, drainage, clearing forests, canals, reservoirs, etc.	
Global concepts extended	Globe- Introduce
Current world news	Suitably graded weekly news reader
A look at South America	

GRADE 5

GEOGRAPHICAL: ENVIRONMENTAL EFFECTS

How man adapts to his environment and makes use of natural resources to satisfy his basic needs	Use any of the fourth grade geography texts presently in adoption
Review basic needs for food, shelter, homes, work, social needs	
Summarize meaning of environment with relation to global concepts and 1. Topography 2. Climate: temperature, rainfall seasons 3. Land and water forms 4. Combinations of altitude and latitude	Read library books of people and customs in many lands. Locate on maps and globes
Study meaning, variety and uses of natural resources and man's responsibility to conserve	
Study how man adapts his living by contrasting and comparing: 1. In this community 2. In Texas 3. In the world	Use texts, library books, visual aids
Global concepts	Use of text, maps, globe
Current world news	Any suitable weekly reader
Citizenship and patriotism	Classroom discussions

GRADE 6

GEOGRAPHICAL: THE UNITED STATES

A Study of the United States by Regions 1. Location and names of states 2. Topography 3. Climate 4. Natural resources 5. Industries 6. Products 7. Interdependence 8. Few major cities	Use any of the fifth geography texts in adoption Use films and filmstrips Keep notebook for summaries of each region Select and keep vocabulary list Draw maps; make product maps
Historical review of the building of America	Learn to make outlines of information in reference books
Emphasize that people came from many lands and that our culture is affected by all of their contributions	By stories in library books, readers and supplementary readers. Use films and filmstrips extensively for history. Read biographies
Citizenship	Films and filmstrips and classroom discussion
Conservation and additions to culture	Classroom discussion. Use resource speakers and films on conservation
Current world news	Weekly reader of some type

SCIENCE

In the program suggested for migratory children, science as a formal discipline will probably be postponed until grade 3. In grades 1 and 2 it is necessary to anticipate and develop the vocabulary necessary for science learning through teacher-directed activities which illustrate the basic science principles and terms. Understandings may be developed by the use of concrete materials and visual aids, by varied experiences, excursions, and observations of the child's environment. Oral language experience charts may be developed.

The formal teaching of science should begin in grade 3, with more emphasis on reading, class discussions, development of science vocabulary, collection of current events and pictures, collection of materials for display and field trips to "collect and observe." Development of concepts in the physical sciences should be emphasized, showing their relationships to the life sciences.

Continuing through fourth and fifth grades, the emphasis will be placed on broadening concepts, stressing those more closely related to the child's needs rather than concepts considered chiefly preparatory for further science study. It is recommended that the vocabulary pertinent to science evolve normally corresponding to the academic growth of the child.

By this time the scientific method of inquiry should be fairly clear to pupils and they should be participating in such activities as:

- collecting materials for experimentation
- developing projects for class activities
- engaging in experiments (both controlled and uncontrolled)
- recording information and making observations
- writing and presenting reports

An extensive list of other activities may be found on pages IX and X of Bulletin 1217, Science, Grades 1-9, Suggested List of Principles and Terms, Texas Education Agency, 1961.

The sixth-grade science program should begin to develop the organization of science as a separate discipline, and pupils should become familiar with common vocabularies associated with the life, earth, and physical sciences.

In grades 7 and 8 the program should meet the needs of students and provide sufficient background for continuing studies in the natural sciences at higher levels. The major emphasis in grade 7 should be on the life sciences with some discussion of the physical science principles and their relationships with the phenomena of living things.

In grade 8 the major emphasis should be on geology and meteorology of the state or states where these students live and work. The study of matter and energy and the nature of chemical reactions should be extended, and science principles related to motion and forces should be introduced.

Basic principles, terms, and activities for science in grades 1-6 are suggested below as guidelines in presenting this subject matter to the students. Additional principles, terms, and activities for grades 1-8 are included in Bulletin 1217, Science, Grades 1-9, and in the textbooks in adoption in the local schools. This list or other resource materials may be used at the discretion of the teacher.

GRADE ONE

I. Physical Science
   A. The structure, property, and changes of matter
      1. Different sizes, shapes, and colors.
         Allow child to feel objects that are soft and hard, and with different shapes.
      2. Man learns about things by using his five senses.
         Smell (We smell with our nose.)
            Blindfold the student and allow him to attempt to identify different fruits, etc.
         Feel (We feel with our fingers.)
            Blindfold and allow student to identify another student.
         Taste (We taste with our tongue.)
            Blindfold and allow student to taste different foods and identify.
         Hear (We hear with our ears.)
            Put the children's heads on desk and strike different objects and ask students to identify the sound.
         Sight (We see with our eyes.)
            What things do you see in a picture?
            Examine the color of a traffic sign, sky, flowers, and other objects.

   B. Fluids
      1. Air is all around us.
         Push pinwheel through the air.
      2. Air is real.
         Invert empty glass in container of water, being careful to insert glass upside down in water. No water should go up into the glass. Slowly tip it sideways so the air bubbles will leave the glass.

Fill balloon with air and let it escape. Observe the change in size of balloon.
Put a balloon filled with air in container of water and observe the bubbles escaping and a change in the size of the balloon.

3. We can feel air in motion.
   Observe the air from an electric fan.
   Have the children make their own fans and feel the air in motion as they wave them back and forth.
4. Some objects will float in air.
   Cause feathers and sheets of paper to be dropped in air.
   Allow smoke to be released in the air.
5. Some objects will float in water.
   Float corks and other objects in water.
6. Some objects will sink in water.
   Place rocks and other objects heavier than water in the container.

C. Magnetism

Magnets will attract some things and not others.

Allow magnets to come close to paper clips, nails, wood, and glass.
If two bar magnets are available, suspend them separately and position them until two ends are about one inch from each other. Try each end of one magnet to one end of the other magnet.
Tie a paper clip to a piece of thread and anchor the other end of the thread to the table with a book or other object. Place the magnet on top of a stack of books and extend one end of the magnet as far out from the top as possible. Then bring the clip up as close as possible without touching to the magnet and adjust the length of the thread so that the clip will remain suspended immediately under the magnet.

D. Heat

The sun is our main source of heat.

Discussion of intensity of heat. Use a magnifying glass to ignite light inflammable materials.
At this time, introduce the terms hot and cold and illustrate by touching hot and cold objects.

E. Light

1. The sun is our main source of light.
2. There are other sources of lights--traffic lights, etc.
   Have a discussion about how strong the sun's light is in comparing with artificial light. The discussion may include the brightness of light on a clear day and the lack of brightness on a cloudy day, etc.

F. Sounds

1. Some sounds are louder than others.
   Drop a book on the floor. Drop a paper clip on a desk.
2. Some sounds are higher.
   Stretch a guitar wire and thump it at different lengths.
3. Some sounds are more pleasant than others.
   Play a record of recognized pleasant sounds and then play the same record at a different speed than called for.

II. Earth Science

A. Geology

1. There are many kinds of rocks.
   A collection of rocks should be shown. (Also, now is the time to relate their experiences with hills, trees, prairies, and bodies of water to their present surroundings.)
2. Rocks and soil make up the land.
   Allow the student to feel of soil samples.
3. Wind can blow away soil.
   Have children recall their experiences with dust storms.

B. Meteorology

1. Clouds are in the air.
   Look at the clouds.
   Steam condensing from boiling water (tea kettle).
2. Clouds are different from each other.
   Observe the shape and color of clouds in the sky.
3. Clouds are like fog.
   Have a discussion about experiences with fog.
4. Wind moves the clouds from place to place.
   Observe movement of clouds.
5. Water comes from clouds to the earth in the form of rain and snow.
   Illustrate by bringing pictures, having a bulletin board, and cutting out pictures.

III. Health and Safety

A. Health

1. Children need food and rest to grow and stay healthy.
   Have a discussion and develop health charts ("what-do-you-do" charts) that the student keeps. This chart will have--"What time do you go to bed?" "What time do you get up?" "Do you take a nap?" "How do you sit in a chair?" "Do you brush your teeth?", etc.
2. Doctors and dentists help children stay healthy.
   Use resource people.

3. Vaccines protect us from some diseases.
   Talk about having to have a smallpox vaccination before entering school.
   Talk about other preventive measures such as vaccines used to combat polio, diphtheria, whooping cough, etc.

B. Safety
1. Learning to cross a street safely.
   Demonstrate by providing experiences involving stop, look, and listen motions using improvised street corners and traffic signs.
2. Learning about the dangers of fire.
   Use fire prevention films.
3. Learning to extinguish fires.
   Pictorially or by using a candle in a jar or pan.
4. Learning about other safety activities.
   Talk about safety in the home, school, and community.
   Use filmstrips.

SECOND GRADE

I. Physical Science
A. Structure, properties, and changes of matter
1. There are different kinds of materials.
   Display objects such as glass, wood, nails, water.
2. Materials are alike in some ways and unlike in others.
   Both the glass and the nails are hard but the nails will bend; wood will not. Objects can be seen through glass but not through wood.

B. Solids
Machines help people to do work more easily or more quickly.
   Discuss the carrying of a watermelon versus carrying it in a wagon. (The advantage of a wheel)

C. Fluids
The earth is surrounded by air.
   Discuss the fact that airplanes cannot fly if there is no air. Airplanes fly from one city to another and around the world. Everywhere we go there is air.

D. Magnetism
A magnet always has two poles.
   Place a bar magnet flat on top of a table.
   Cover the magnet with a sheet of white paper and sprinkle iron filings on top of the white paper in the general vicinity of the magnet. Observe the circular patterns of the iron filings around the ends of the magnet. These are magnetic poles.

E. Heat

Temperature can be measured.

Take a thermometer and record the temperature of the room and of warm and cool water. Allow the students to observe the change in the length of the mercury or alcohol column in the thermometer.

F. Light

1. The nearer you are to a source of light the brighter it is.
   Look at a burning candle close up and at a distance.
2. Sunlight is composed of the colors of the rainbow.
   Recall their experience of seeing a rainbow. Direct the sunlight through a glass prism or through the corner of an aquarium and observe the breaking up into colors of the sunlight.

G. Sound

1. Some substances carry sound better than others.
   Talk through a metal pipe several feet long while another student is listening on the opposite end of the pipe and note the intensity of the voice at the same distance without using the pipe.
2. The nearer you are to the source of sound the louder it is.
   Discuss the position taken by people around a television set. Is it the sound or the picture or both?

II. Life Sciences

A. All living things or either plants or animals.

Discuss things that grow such as dogs, cats, crows, pigs, rabbits, cotton, watermelons, orange trees, and carrots.

B. Plants and animals need light and warmth to live and grow.

Cover a patch of green grass with a piece of cardboard (2' x 2') and observe the grass after one week.

C. Animals need different kinds of foods.

Discuss the fact that animals eat grass, grains, leaves, insects, and water animals.

D. Animals move about to find their food.

The frog comes out at night seeking insects which gather around a light. The cow moves over the pasture to find grass, a fox catches rabbits, and insects eat vegetable leaves and fruits.

E. Some animals hibernate in winter.
   Discuss the story of the bear in Yellowstone National Park and what he does in the winter. Also what happens to snakes in a cold climate in the winter.

F. Some babies hatch from eggs and some are born from their mothers.
   Discuss the fact that chickens, birds and roaches are hatched from eggs. Kittens, puppies, guppies are born from their mothers.

G. Plants get some of the things they need for growth from the soil.
   Discuss the reason why people fertilize cotton or vegetables. Set two tomato plants in separate flower pots. Feed one plant fertilizer but not the other and observe the difference in growth. Do not exclude the water.

H. Many plants produce seeds.
   Make a collection of as many different seeds as possible.

I. Seeds are moved about in many ways.
   Make a collection of cocklebur, cottonwood, and other seeds which have different ways of getting from one place to another.

III. Earth Science

A. Geology

1. The land on the earth is made up of plains, hills, and mountains.
   Have the children recall some of their experiences with the above.
2. There are different kinds of soil.
   Have on display as many different soils as possible.
3. The water on the earth is found in rivers, lakes, and oceans.
   Build bulletin boards of pictures of these bodies of water.
4. Water runs down hill.
   Pour water on a piece of board while it is lying flat on the table. Then tilt the board at an angle and observe the movement compared to that while lying in a flat position.

B. Astro-Science

1. The earth turns once every 24 hours to make day and night.
   Illustrate with a flashlight and a ball or a globe how the earth turns to make day and night. Let the light serve as the sun shining on the ball (the earth). As the ball rotates in a darkened room locate a position on the ball that is a different color so that the student can observe the rotation of the ball (the earth).

2. Up is away from the center of the earth.
   Use the ball to point out that from the inside center of the ball to any direction is up.
3. The moon goes around the earth.
   This can be demonstrated by the use of three balls. Use the larger for the sun and the next largest for the earth. Leave the larger ball (the sun) in the center of the table. Draw a circle about 2 feet around the sun. Set the earth somewhere in this path and draw a circle about 4 inches around it and set the third ball (the moon) on this path around the earth.
4. The moon reflects sunlight.
   Darken the room and shine a flashlight to one side of a ball or globe.

C. Meteorology
1. A cloud is made up of tiny drops of water.
   Remind the students of the dampness of fog. Also observe droplets of water in condensed steam.
2. Fog is a cloud on the ground.
   Recall experiences of trying to find one's way in a fog.
3. Rain falls from clouds.
   Discuss the fact that up where the clouds are no more water can evaporate to become part of the air. So drops of water in the clouds fall to the ground.
4. Sometimes the wind changes direction.
   Discuss direction of wind in the summer and in the winter.
5. There are four seasons.
   Have the students recall the times of the year their parents change jobs and the conditions of the weather at each change. This may not be appropriate for some.

THIRD GRADE

I. Physical Science

A. Structure, properties, and changes of matter.
1. All objects are made of matter.
   This fact can be brought up in the discussion of the next two principles.
2. Matter occupies space and has weight.
   Make a hole in a cork and put a funnel into it. Put the cork into a bottle. Try pouring water through the funnel. If all connections are tight, water will not go into the bottle. Examine different objects for weight.

3. Matter has three forms: solid, liquid, and gas.

    Place a few ice cubes in a tea kettle until they melt.
    Heat the water until it evaporates.

B. Solids

The force of gravity pulls objects to the earth.

Observe that any object dropped from above the floor falls to the floor.

C. Magnetism and electricity.

1. There are many sources of electricity.

    Observe that a bulb burns brightly if properly connected to a battery. Observe also that lights in the ceiling when properly connected to the wiring will also burn brightly.

    Observe the shock that one receives when he slides on a seat cover or a wool rug, during a day of extremely low humidity, and then touches a metal object.

    Observe lightning during a thunderstorm.
2. Electricity must have a pathway.

    Connect two electric wires to the binding posts of an electric cell. Bring the two ends of the wires together through a flashlight bulb.
3. A switch is used to turn electricity on or off.

    Use battery, bulb, and wire from the above experiment to demonstrate the on and off effect by alternately connecting and disconnecting the wire to one of the binding posts.
4. Some materials carry electricity and some do not.

    Do the same experiment above with pieces of string instead of pieces of wire.

D. Light

1. Light will pass through some objects better than others.

    Using a flashlight, allow the light to pass through a piece of glass and then through a sheet of paper separately.
2. Light will not pass through some objects.

    Demonstrate that light will not pass through other objects such as a piece of iron.
3. Shadows are formed when light does not pass through an object.

    Have children go outside and see their own and other shadows. Compare their shadow with shadows of objects which light will go through--a piece of clear glass, etc.

II. Life Sciences

A. All living things need oxygen.

Discuss observations made by putting fish in a container of water without plants. Since plants supply oxygen to the water for the fish, the fish will soon die from the lack of oxygen.

B. There is a definite size limit for each species of plant and animal.

Observe that the trees, animals, etc., when fully grown are about the same size as their own kind.

C. Plants and animals reproduce themselves in many ways.

Place on the table biological specimens which represent different methods of plant and animal reproduction: seeds, string of toad eggs, bird eggs, etc. Supplement with pictures on bulletin board.

D. Individuals die, but their species continue.

Discuss the cycle of life.

E. Some plants and animals grow slowly; others grow rapidly.

Plant beans and set cacti, for example, to later demonstrate that they grow at different rates.

F. Some plants and animals are small; others are large.

Take children outdoors to observe full-grown plants and trees.

G. Animals depend on plants and other animals for food.

Take a trip around the campus and have the children observe birds and other animals eating.

H. Some animals stay in one area most of their lives.

Observe the habitats of mice.

I. Animals move about to escape their enemies.

Observe small birds moving away from a bird hawk.

J. Most mammal babies are born alive and all are fed milk from their mothers' bodies.

Obtain film about mammals. Supplement by encouraging children to watch cats, etc., feed their babies.

K. Chances of survival of animals are increased by protective adaptations.

Discuss protective coloring of deer, frogs, etc.

L. Plants make food only in their green parts.

Make the observation that when a tree is stripped of its leaves, it usually dies.

M. Green plants use light as the energy source to make food.
Move a green plant inside a dark room and observe the results.

N. Plants store food in seeds, roots, stems, bulbs, leaves, and fruits.
Examine a collection of the above and discuss the fact that man uses some of them for food.

O. Green plants are dormant in the winter.
Have children observe trees and plants in winter.
Observe the shedding of leaves on trees and plants.

P. Some groups of foods provide energy; others aid in growth.
Use visual aids to point out energy foods and growth foods.

III. Earth Sciences

A. Geology

1. Rocks are composed of one or more minerals.
Use a hand lens or magnifying glass to detect crystal substances in the rock.
2. Soil contains bits of rock and crumbled plants.
Put some soil into a jar of water. Let it stand for a while. Pour out the water. Feel of the soil left in the jar.
3. Water runs downhill and carries soil, rocks, and dissolved minerals.
Go outdoors after a hard rain. Look for places where the water ran down a hill.
Make a pile of soil outdoors. Pour water over it.

B. Astroscience

1. The sun is in the center of the solar system.
Discuss the planets in our solar system, their paths around the sun and the distances away from the sun.
2. The planets are different distances from the sun.
Same as above.
3. The planets are different sizes.
Describe the brightness of the different planets in relation with the distance from the earth.
4. The planets move around the sun.
Place an electric lamp on the floor and use it as the sun.
Circle the floor for the path of the earth and other planets.
Ask the children to walk slowly around the circles.

C. Meteorology

1. Clouds may form at different heights in the sky.
Have children observe clouds in the sky one day and clouds on the earth (fog) on foggy days.

2. Above the clouds, the sky is clear.
   Demonstrate by a picture of an airplane above the clouds with sun or moon and stars shining.
3. Water and water vapor travel from the ground to the clouds and back.
   Explain with the use of charts, films, and filmstrips.
4. Water comes from the surrounding air and collects on things cooler than the air to form dew.
   Fill a glass with ice-cold water. Dew will form around the glass in a short while.

D. Oceanography

Heat from the sun causes ocean water to evaporate.

Put some water into two cans. Heat one of them until all the water has evaporated. Let the other one stand until its water has evaporated.

Suspend a stick from the ceiling by tying it in the middle with a string. Tie a damp cloth to one end of the stick. Balance the stick by wrapping enough dry cloth on the opposite end. Allow to stand and observe the balanced stick as the water evaporates from the wet cloth.

FOURTH GRADE

I. Physical Science

A. Structure, properties and changes of matter.

1. Matter may exist as solids, liquids, or gases (states of matter).
   Display solids: wood, sulfur, and sand.
   Display liquids: water and oil.
   Display gases: bottle of air, a partially filled, bottle of rubbing alcohol, and an inflated balloon.
   Observations: Solids have shapes of their own. When a liquid is poured from a bottle into a flat container, it spreads out to the shape of the container. Water takes the shape of the container. Release the air from the balloon. Notice that it would be almost impossible to gather the air and put it back into the balloon.
2. Solids can be given a definite size and shape.
   Refer back to 1.
3. Liquids conform to the shape of the container.
   Refer back to 1.
4. Gases expand through the whole space available.
   Refer back to 1.

B. Solids

1. Friction is the rubbing between two surfaces.

   Rub two blocks of wood together vigorously. Observe the heat produced.

   Spread a thin film of oil on two glass plates and rub them together. Notice the absence of heat compared to that observed in the two blocks of wood.

   In dragging an object more friction is encountered than if the object was on wheels. The rolling motion causes the objects to go over the bumps but in dragging the objects, we pull through many of the bumps.

   Pull two pieces of sand paper over one another. Do this again after both have been oiled. Oil fills in the holes and makes for less friction.

2. Smooth surfaces produce less friction than rough surfaces.

   Refer back to 1.

3. More work is required to move things when friction is greater.

   Refer back to 1.

4. Friction produces heat.

   Refer back to 1.

5. Oil reduces friction.

   Refer back to 1.

C. Fluids

1. Air occupies space.

   Secure a balloon on either end of a yardstick. Suspend the stick above the floor with a string from the ceiling. Carefully balance the stick. Fill one of the balloons with air and observe the effect on the balance situation. Air takes up space and also has weight.

2. Air has weight.

   Refer to 1.

3. Air exerts pressure.

   Refer back to 1.

4. Air is necessary to life.

   A continuous supply of energy needs to be furnished the body to maintain the temperature and normal body functions. This energy can be furnished only if oxygen from the air combines with the digested food. If oxygen is excluded from an animal's lungs, then that animal will die.

5. Air pressure decreases as the altitude increases.

   A balloon filled with helium will float in the air. As it rises it becomes larger as a result of the outside pressure becoming less. The air pressure at sea level is about 30 inches of mercury. There is a decrease of about 1 inch for each 1,000 feet up.

6. Oxygen in air helps things to burn.
   Demonstrate by extinguishing a lighted candle by turning an empty jar over it.
7. Water occupies space.
   Water like air is a fluid. To distinguish it from air, we say it is a liquid. When a bottle full of water is poured into a flat dish, it covers the bottom and takes the shape of the container. One gallon of water weighs about 8 pounds. It becomes increasingly difficult to dive below ten feet in water because of the increasing pressure on the body.
8. Water has weight.
   Refer back to 7.
9. The pressure of water depends upon its depth.
   Refer back to 7.
10. Water pressure increases as depth increases.
    Refer back to 7.
11. Water is a liquid.
    Refer back to 7.

D. Magnetism and electricity

1. Magnets can be made by stroking a magnetic substance with a magnet.
   Strike a bar magnet in one direction with a needle and make a test for the retention of magnetic properties. Since it is impossible to cut a magnetic bar in such a way as to separate the south pole from the north pole, there is no such thing as two magnetic poles. But for lack of a better description of the properties of magnets, we will refer to the magnets as having two poles. The field of force around two ends of a magnet can easily be detected by sprinkling iron filings into a sheet of white paper under which is a bar magnet. Magnetic properties of the earth can be demonstrated by magnetizing a freely rotating piece of metal. Notice the angle at which the piece of metal rests before and after it is magnetized.
2. A magnet always has two poles and is surrounded by a field of force.
   Refer back to 1.
3. Like magnetic poles always repel each other, and unlike magnetic poles always attract each other.
   Refer back to 1.
4. The earth has a north magnetic pole and a south magnetic pole.
   Refer back to 1.

E. Heat

1. An area of the earth begins to warm when the amount of heat gained is greater than that lost (seasonal changes).

   Select three cans the same size and make. Paint one of them black, the second one white, and the third leave as is. Fill each with the same depth of water and place each the same distance from a source of heat. How does the temperature in the three cans of water differ?

   Discuss the action of a thermos bottle to reduce the amount of heat lost or gained.
2. An area of the earth begins to cool when the amount of heat lost is greater than that gained (seasonal changes).

   Refer back to 1.
3. Heat is gained during the day and lost during the night.

   Refer back to 1.
4. Dark surfaces absorb and give off heat better than light surfaces.

   Refer back to 1.

F. Sound

1. Sound is produced by vibrating matter.

   Strike a tuning fork and while it is still sounding touch the surface of some water in a pan with one of the prongs. The vibration of the prong will cause vibrations in the water.
2. Sound is transmitted by matter.

   Stretch a wire the length of the room and attach a can at each end. Allow two students to talk to one another by alternately using the can as a microphone and an earphone.
3. Sound travels in all directions from its source.

   Sound waves are somewhat like the water waves produced by the tuning fork in the above experiment.
4. Sound can be reflected (echo).

   Stand about 100 yards from a brick wall and shout.

   Observe the echo.
5. Musical tones are produced when the vibrations received by the ear are regular.
6. Noise is produced when the vibrations received by the ear are irregular.
7. The pitch of a sound depends on the number of vibrations per second at the source.

   Thump one of the bigger strings on a guitar and then do the same thing to a smaller string.

   Arrange six coca cola bottles in a line with increasing amounts of water. Blow across the tops of each.

II. Life Sciences

A. All living matter, or materials, is made of cells.

Use a bioscope to project a piece of the outside layer from a wandering jew leaf onto a screen. Point out the plant cells.

B. Cells are of many different sizes and shapes.

Compare the above cells with cells in the human body.

C. All cells arise through the division of previous cells.

Draw on the board a cell and label its parts. Make another drawing of the cell depicting the splitting of each part of the cell into two like parts.

D. Living things grow and undergo changes.

Corn seed sprouts and then develops into a stalk and on this stalk appears an ear of corn. From this ear of corn come seed which start the cycle over again.

E. Living things are able to produce, in one way or another, new individuals like, or nearly like themselves.

Refer back to D.

F. An organism must either secure, or have secured for it, the required material for its life processes.

Secure two like potted plants. Water and fertilize one and not the other. Observe.

G. Most living organisms satisfy their respiratory needs either from oxygen free in the atmosphere or from that dissolved in water.

Refer back to F.

H. Some organisms depend wholly, and others partly, on other organisms for life.

Mistletoe depends on a tree for its food.

I. Sea plants and animals are dependent on the substances dissolved in the water of the area in which they live.

Dry salt does not pass through a paper sack. If water is poured on top of the salt, the salt dissolves in the water and passes through the paper with the water. Most undissolved materials depend on water to cause them to penetrate matter. Water is used as a medium to transfer essential materials from one cell to another or from one location to another.

J. All living things need water.
Refer back to 1.

K. In organisms, special organs perform different functions.
The heart pumps the blood. The lungs serve as a pump for supplying air. In higher altitudes where the amount of oxygen is much less than at sea level a person's lungs become larger in order to store more air.

L. Every living organism possesses some body parts which are adapted to the life it leads.
Refer back to K.

M. The functions of color in most organisms are either to conceal, to disguise, or to advertise.
Lizards change color to conceal their presence. A male peacock has a beautiful color whereby to attract the female peacock.

N. Sugar, starch, and fats are necessary for providing the energy for living things, while proteins and minerals are necessary for their growth and repair.
A large per cent of rice, potatoes and corn is starch. We need a large amount of energy. Thus one of these three foods makes up a great part of our diet. Beans and meat furnish us the proteins and a few vitamins. Vegetables and fruit provide us with the other necessary minerals and vitamins.

O. Living things succeed in definite zones and local regions where conditions are favorable for their survival.
Animals which spend all of their life in the jungle are not adapted to live in the cold north.

P. A large part of every animal and plant is water.
Weigh a piece of apple and then slowly bake it for a day or two and weigh a second time. The weight loss represents the water that was originally in the apple.
Also refer to I and J.

Q. Land plants and animals are directly, or indirectly, dependent on the soil moisture and its dissolved substances.
Refer back to P.

R. Plants and animals vary in size and shape.

S. Migration of land organisms is barred by stretches of water, while migration of water organisms is barred by stretches of land.

T. Different plants and animals live in different geographic regions and under different climatic conditions.

U. Some plants and animals that lived long ago are now extinct.
Recall the skeletons and drawings of animals that are no longer represented by their kind on earth.

V. Most diseases are caused by plant and animal organisms.

W. When plants and animals die and decay, their minerals return to the soil.
The Indians made a practice of burying animals such as fish near where certain seeds were to be planted. As the animals decayed, they gave up essential minerals to be used by the plant.

X. Plants produce starches, fats and proteins on which both they and animals depend on for food.
Carrots, potatoes, corn, rice, beans, and fruit.

Y. The work of the chlorophyll of all chlorophyll-bearing plants is essential to living things in providing food.
The chlorophyll is the green matter in plants.

Z. Chlorophyll-bearing plants make their own food.

-A. The green matter of plants, chlorophyll, in the presence of sunlight manufactures sugar and starch.

-B. Reproduction of flowering plants occurs in the flower.
Draw a diagram of a flower and label the reproductive parts.

-C. Some animals have outer skeletons and others have inner skeletons.

-D. Human bodies are like machines in some ways.
The shoulder and hip joints are ball and socket type machines. The muscles lengthen and then contract in such a way as to serve as forces to move the skeleton of a animal.

-E. All animals may be classified by their structure into two groups, vertebrates and invertebrates.
Insects do not have backbones. Fish, frogs, snakes, birds, and dogs have backbones.

-F. Life may exist under conditions of light, ranging from bright sunlight to the complete darkness of caves, deep oceans, or thick layers of soil.

Sunlight is essential for most large animals as a source of light and other energies. They use this light and other forms of energy to see how to move about, to heat their bodies and to convert non-essential materials into essential ones.

-G. Life, as we know it, is wholly confined to the surface of the planet earth and to a few miles about and below its surface.

We do not know whether or not life exists on other planets, but scientists believe that on some planets conditions exist such as would support life.

III. Earth Sciences

A. Geology

1. Surface water moves downslope and is collected into streams and rivers in response to gravity.

   Use anapple box to contain a replica of layers of top soil. Replace one end of the box with screen wire. Build the layers of soil so that they will slant toward the screen wire. Demonstrate the movement of water on the surface and underground soil. Demonstrate also soil erosion.

2. Some of the water that falls to the earth goes underground and affects the water table.

   Refer back to 1.

3. There are many geographic features of the earth's surface.

   Refer back to 1.

B. Astroscience

1. The rotation of the earth on its axis produces the succession of day and night.

   Use a light bulb and a globe to demonstrate the change from day to night and night to day on any one spot on our planet. Make the bulb stationary relative to the circular path of the earth (globe) and explain that the time it takes for the earth to go around the sun is equal to one year.

2. The time it takes the earth to revolve around the sun once is called a year.

   Refer back to 1.

3. A star is a huge ball of hot, glowing gases.

   The sun is the closest star. Stars outline our constellations. Most of the constellations seem to revolve about the north star. At 8 p.m. during the month of July, the big dipper will be located at a different place relative to the north star than at 8 p.m. during the month of February.

4. Our sun is a star.
   Refer back to 3.
5. Stars appear to be in groups called constellations.
   Refer back to 3.
6. The stars seem to move across the sky because the earth is rotating on its axis.
   Refer back to 3.

C. Meteorology

1. Seasonal changes are caused by the earth's journey around the sun and by the tilt of the earth's axis.
   As the earth rotates around the sun, it tilts a few degrees. This tilting causes some areas on the earth to be nearer or farther away from the sun.

D. Oceanography

1. About three-fourths of the earth is covered with water.
   Use the globe to point out how much less land there is not covered by water than there is covered with water. Also point out that the greatest depth of the ocean (about 10 miles deep) is in an area around the Phillipine Islands.
2. The ocean varies in depth.
3. There are many minerals in the ocean.
   There is an industrial plant designed (one is located in Freeport, Texas) to separate minerals from the sea water. Such elements as sodium, chlorine, iodine, and gold are obtained from the sea water in this plant.
4. Plants grow only in the layers of the ocean where sunlight is available.
   Water plants are found near the top of the surface of the ocean. Experiments are now being conducted to determine the ways in which these plants can be made edible. Animals from microscopic size to the size of whales inhabit the ocean. Some animals spend all their life near the bottom of the ocean.
5. Large quantities of food are produced in the oceans.
   Refer back to 4.
6. All types of living things are found in the ocean.
   Refer back to 4.
7. Life exists at all depths of the ocean.
   Refer back to 4.
8. The gravitational attraction of the sun and moon causes tides.
   Demonstrate the gravitation pull on the earth exerted by the moon and the sun and the distortion of the ocean.

FIFTH GRADE

I. Physical Science

A. Structure, properties and changes of matter.

1. Matter exists as elements, compounds and mixtures.
   Have on display iron and sulfur for the elements, salt and sugar for the compounds and a combination of all four for the mixtures. Other substances may be used if desired.
2. A physical change has taken place when a substance changes its form or appearance but retains it properties.
   Break a piece of glass; melt a piece of wax.
3. A chemical change has taken place when new products are formed and heat and light are given off.
   Strike a match; combine vinegar and soda. (A gas is formed.)
4. When a material burns, it combines with oxygen.
   Submerge a burning match in water. This act excludes oxygen from the match.
5. The smallest part of an element is an atom.
   Open a perfume bottle in one corner of the room and allow it to stand for a few minutes. Observe odor in other parts of the room.
6. The smallest part of a compound is a molecule.
   See activity for 5.
7. Atoms combine chemically to form molecules.
   See activity for 5.
8. An electron is a tiny negatively charged particle.
   Explain that because a magnetic field can control (deflect or detract) certain streams of particles (such as in big television tubes) this offers some proof of positive and negative particles which cannot be seen.
9. A proton is a tiny positively charged particle.
   See activity for 8.

B. Solids

1. Weight is the measure of the force with which the earth pulls a body.
   One would weigh less on top of Pike's Peak than in the Rio Grande Valley. The further one is away from the center of the earth, the less force the earth has upon that person. Because of that force, objects fall to the earth.
2. Energy is the ability to do work.
   The light and warmth from the sun causes water to evaporate. Electricity causes motors to turn. Heat causes metals to expand.

C. Fluids

1. Wind blows from high pressure areas to low pressure areas.
   Air rushing from a bicycle tube through the valve to the open air.
2. Winds are caused by unequal heating of the earth's surface.
   Feel the movement of air over hot radiators in the classroom or a trash fire.
3. Land heats and cools more rapidly than water.
   On cold mornings feel the warmth of a lake or pond and the coolness of rocks or cement.

D. Magnetism and electricity

1. Magnets possess energy.
   Magnets will cause iron nails to be pulled toward them.
2. Electricity is a form of energy.
   Electricity will cause motors to turn and light bulbs to light up.
3. There are two kinds of electrical charges, positive and negative.
   Suspend a pith ball with a piece of thread. Rub a glass rod with a silk cloth and immediately bring the glass rod within 1/4" of the pith ball. Now rub a bakelite rod with a wool cloth and bring the bakelite rod within 1/4" of the pith ball. Observe the force acting upon the pitch ball in both cases.
4. Like electrical charges repel and unlike electrical charges attract.
   After the pith ball in the above experiment is charged by the glass rod, a second charging of the rod should repel the pith ball--light charges exist on both the glass rod and pith ball.
5. Static electricity is produced by friction.
   The experiment with the glass rod, silk cloth and pith ball demonstrates this principle.
6. Charges of static electricity tend to be lost into the air on humid days.
   Activity for number three above demonstrates this principle. Also, combing one'shair on a day of low humidity demonstrates this principle.
7. Charges of static electricity may be built up in non-conducting materials.
   See activity for 6 above.
8. Lightning is a form of electricity produced by friction.
   Movement of clouds through the air and over each other causes lightning.

E. Heat

1. Cold is the absence of heat.
   The removal of some heat from inside of a refrigerator causes water to freeze.

2. Most substances expand on heating and contract on cooling.
   A provision for this expansion is allowed for on a railroad track by leaving a small space between the ends of the tracks.
3. Heat causes solids to melt and liquids to evaporate.
   The changing of ice into water and water into steam.
4. Loss of heat causes gases to condense and liquids to freeze.
   Tea kettle of boiling water. The condensation (cloud of water) takes place because the steam has lost heat to the surrounding area.
5. Warm air holds more water vapor than cool air.
   When warm air is cooled to a particular temperature, condensation of some of the water vapor is observed in the form of fog.)
6. Fuel, oxygen, and kindling temperatures are necessary for combustion.
   A lighted candle in a bottle will cease burning after a minute or two.

F. Light
1. Light is a form of energy.
   Light causes electrons to jump out of most substances.
2. Light travels about 186,000 miles per second.

G. Sound
1. Sound is a form of energy.
   Notice the vibration of a speaker from a radio, television or phonograph as the sound is reproduced.

II. Life Sciences
A. All living matter is made of protoplasm.
   Observe the euglena through a bioscope. Draw the euglena and label the different parts.
B. Protoplasm is the physical basis for life.
   Observe other one-cell organisms through the bioscope and point out the protoplasm.

C. Carbon and nitrogen are basic elements in the organic compounds of protoplasm.
   Point out that carbon compounds and nitrogen compounds are basic products of decay of organic matter (living matter).

D. The smallest unit of protoplasm is a cell.
   Draw a cell and label the parts.

E. Most cells have a central part, the nucleus; and outer part, the cytoplasm; and some also have wall structures.

Again refer to the diagram of the cell and the euglena.

F. The cell nucleus controls the fundamental processes of nourishment, digestion, regeneration, and cell division.

See activity for E.

G. The cell nucleus contains particles called genes, which transmit hereditary factors in an organism.

See activity for E.

H. Plant and animal protoplasms are similar.

See activity for E.

I. All living cells require oxygen for releasing energy and for building new protoplasm.

See activity for E.

J. Energy is produced by the burning of food in the body.

The body is kept at an elevated temperature because of the heat produced from the burning of food in the body.

K. The sun is the basic source of energy for all living organisms.

Most of the energy on earth is received directly or indirectly from the sun.

L. All plants and animals are engaged in a constant struggle for life.

Plants need a particular amount of air, water and minerals.

M. Plants and animals utilize similar food substances, but these are obtained in different ways.

Plants source of food is air and soil. Animals' source of food is plants, other animals and water.

N. Foods are classified as fats, carbohydrates, proteins, minerals, vitamins, and water.

Fats--butter, grease and meats; carbohydrates--bread and other starch food; proteins--meats and beans; minerals and vitamins--cabbage, lettuce, fruits and cereals.

O. Most living things depend directly or indirectly on the products of photosynthesis for food.

Plants obtain food directly from photosynthesis. Animals obtain food indirectly from photosynthesis.

P. Carbon dioxide set free during the respiration of both plants can be absorbed by plants and used as a raw material of photosynthesis.
  Plants give off water and carbon dioxide.

Q. Living things give off waste materials.
  Animals give off carbon dioxide, water, and undigested food.

R. Animals and plants live and grow to certain limits by adding to the cells in their bodies.

S. There is a definite orderliness in the life processes of an organism.

T. Similar organisms are grouped together because they are related through common characteristics.
  Cats, dogs, cows, and horses.

U. A great variety of plants and animals have become extinct as a result of too sudden changes in their environment.
  The mammoth in the frozen North.

V. Species not fitted to the conditions about them become extinct.
  See activity for U.

W. Organisms best adapted to their life situations are the ones that survive.
  See activity for U.

X. The union of the ovule and the pollen of a flowering plant results in the fertilization and the formation of the seed.
  Draw a diagram of the flower, label its parts and conduct a discussion.

Y. Plants move as they grow.
  The tree grows taller; the vine grows longer.

Z. The less the amount of parental care given to the offspring, the greater is the need for the animal to be prolific.
  A cow produces one offspring a year and takes very good care of it. One fly produces thousands of offspring each year but cares not for them.

-A. In animals the number of young which are produced at a birth or hatching, bears a definite relation to the chance of survival.
  See activity for Z.

-B. The kind of soil in an area depends on the nature of the rock materials and the amount of humus added.
See activity for Z.

III.

A. Geology

1. **The earth is made of many kinds of metals and rocks.**
   Iron, copper, alumimum, red rocks, white rocks.

B. Astroscience

1. **The moon shows phases when viewed from the earth.**
   New moon, first quarter, etc.
2. **The moon always keeps the same side toward the earth.**
   An eclipse occurs when the earth or moon passes through the shadow of the other.
3. **An eclipse occurs when either the earth or the moon passes through the shadow of the other.**
   See activity for 2.

C. Meteorology

1. **Weather is the changing condition of the atmosphere.**
   Cold and hot weather, sunshine and rainy weather.
2. **Changes in humidity, pressure, and temperature of the atmosphere causes weather changes.**
   Use homemade weather stations to detect changes.
3. **Warm air is less dense than cool air; therefore, warm air rises and cool air sinks.**
   The air in the room is warmer near the ceiling than on the floor.
4. **Clouds consist of tiny water droplets or ice crystals suspended in the air.**
   Recall experiment with fog.
5. **There are various types of clouds.**
   Cumulus, less than 5,000 feet; nimbus, 5,000 feet; Alto Cumulus, 5,000 to 10,000 feet; Cirro-Cumulus, 15,000 to 20,000 feet; Cirrus, 30,000 feet; Cirro-Stratus, more than 30,000 feet.
6. **Air must be cooled to cause precipitation.**
   Air becomes cooler during and after a rainstorm.
7. **There are various forms of precipitation.**
   Snow, ice, hail, rain, and fog.
8. **Wind, clouds, and precipitation are produced when weather changes.**
   Recall the approaching of a cold spell.
9. **Rates of evaporation are affected by temperature, humidity, and wind speed.**
   Allow a pan of water to sit uncovered in a room undisturbed. Place a similar size pan of water during the same period of time in front of an electric fan that is turned on. Observe the difference in rate of evaporation of the water from the two pans.

10. There is a continuous transfer of water between the earth's surface and the atmosphere.
    Evaporation, condensation, and precipitation.
11. A falling or rising barometric reading is indicative of a weather change.
    Clouds and air masses rushing to a low pressure area.
12. Pressure areas generally move from west to east across the United States.
    Check on weather maps and details.
13. When air masses of different temperature meet, storms may occur.
    Discuss the fact that warm air holds more moisture than cold air and if the warm air is laden with moisture when it meets the cold air, precipitation in the form of rain, sleet, hail or snow will likely result. This happens because the warm air becomes cool and can no longer hold all the moisture it is holding.
14. Storms may produce precipitation, violent winds, changes in temperature, lightning, and thunder.
    See activity for 13.
15. Thunder results from the expansion of gases which have been heated by lightning.
    Compare this to the noise of a bursting balloon. (The air is expanding rapidly.)
16. The difference in temperature between night and day is caused by the balance in energy received from the sun and that lost from the earth.
    Consider how hot a piece of metal becomes during the heat of the day and how cool it becomes by dawn of the next morning.
17. Climate is affected by latitude, altitude, nearness to bodies of water, and surface features of the land.
    Consider the temperature at the same latitude of deserts, plains, gulfs, mountains, and forests.
18. Violent convection currents may cause tornadoes.
    Recall the small "twisters" that occur throughout the day, more especially in the afternoon during the summer months. These are better observed in plowed fields.

D. Oceanography

1. Ocean currents influence the climatic conditions on the land.
2. Currents of wind and water in the ocean change the climate of the nearby land.

SIXTH GRADE

I. Physical Science

A. Structure, properties, and changes of matter

1. Atoms are composed of three basic particles--protons, electrons, and neutrons.
   Draw basic structures of atoms and label the parts.
2. The nucleus of an atom is composed of protons and neutrons.
   See activity for 1.
3. Different kinds of atoms are the result of varying numbers of protons in the nucleus of the atom.
   See activity for 1.
4. Radioactive elements change by throwing off particles (alpha, beta) and rays (gamma).
   These particles can be detected by a cloud chamber. Refer to Chemistry Magic by Kenneth Sweezy.
5. Radioactive elements may be natural or man-made.
   Uranium and radium are examples of natural radioactive elements--plutonum, americium are man-made.
6. Radioactivity causes changes in the nucleus of the atom (nuclear changes).
   A decrease or increase in the atomic number.
7. Elements may be changed into other elements.
   Nitrogen into oxygen was the first success by man. (Artificial transmutation.)
8. There are great quantities of energy within atoms.
   One pound of uranium will liberate about the same amount of energy as a football stadium filled with coal.
9. Atoms may be split by bombarding the nuclei (fission).
   When a proton strikes a neuclus of a certain kind of uranium atom, it causes the atom to split into several smaller atoms and other particles plus energy.
10. Great amounts of energy are released when atoms split.
    Refer to 9.
11. Matter and energy are interchangeable.
    Refer to 9.

B. Solids

1. All bodies have a gravitation attraction for all other bodies.
   The earth attracts the moon and causes it to stay within a certain orbit about the earth. The moon attracts the earth with such force that it causes ocean swells and depressions.
2. Gravitation attraction between bodies is dependent on their quantity of matter (mass) and the distance between them.
   The earth offers a much greater attraction for the moon than the moon for the earth. The moon is about one-eighth the size of the earth.

3. The force of gravity is not the same in all parts of the world.
   A person or an object weighs less on top of Pike's Pike than at sea level.
4. The momentum of an object is determined by its mass and velocity.
   Which had you rather have happen to you? To get tackled by a 120 pound person or a 60 pound person. The 120 pound person is only running one-half times as fast as the 60 pound person.

C. Fluids
1. The pressure at any point in a fluid is the same in all directions.
   Adjust both the small front ventilator windows in a car about one-half way open. Close the rest of the windows. Locate a burning cigarette near the open window on either side of the car. Observe the movement of smoke out the windows while the car is traveling at different speeds.
2. As the speed of air flow increases, the lateral pressure decreases.
   Refer to 1 above.
3. As water flows faster through a pipe, its lateral pressure decreases.
   Refer to 1 above. Water is a fluid.

D. Magnetism and electricity
1. A magnetic field is developed around a wire carrying electricity.
   Place a white sheet of paper over one of the wires from a battery and sprinkle a few iron filings on the paper and check for an electromagnetic field. The wire must be presently serving a burning light or other electrical apparatus.
2. An electromagnet is made by wrapping insulated wire about a soft iron core and passing electricity along the wire.
   Wrap a wire (16 guage preferable) around a big iron nail and connect both ends of the wire to the poles of a battery. Observe the magnetic properties of the nail.
3. The strength of an electromagnet depends on the number of turns of wire, the size of the core, and the amount of electricity.
   Change the number of turns of wire around the nail and observe any change of strength in the magnet. Also increase or decrease the size of the nail and the amount of electric current and observe any change in the magnetic field.
4. An electromagnet has two poles and is surrounded by a field of force.
   Use usual method for detecting the poles and characteristics of each.
5. Like poles repel and unlike poles attract.
   Refer to 4 above.
6. Switches are used to open and close circuits.
   Observe the on and off of the flashlight bulb when the wires from the batteries are alternately connected and disconnected. This is the action of a switch.

7. Conductors will carry electricity and non-conductors (insulators) will not.
   Displace the wires in the above experiment with thread.
8. Some materials are better conductors than others.
   Try copper wire for the leads and then baling wire (hay baling wire).
9. All materials offer some resistance to electric current. In this process some of the electric energy is transformed into heat and light.
   The wire inside a light bulb (use clear bulb so that the wires can be seen).
10. Electrical energy when passing through materials with high resistance (filaments, heating elements) can be changed into heat and light.
    See activity for 9 above.
11. Electrical circuits can be wired in parallel or in series.
    In series wired circuits for batteries the total output voltage will be the sum of the values for each battery. In parallel wired circuits, the total output voltage will be the output of a single cell.

E. Light

1. Light energy is transmitted in the form of waves.
   Use a flat transparent (pyrex glass) breadpan (as large as you can afford but at least 12" by 12"). Set it on a chair-like frame without a bottom at least 24" from the floor. Add water to about 1/2" in depth and direct a spot light from the top through the water. As one thumps the water the waves are projected on the floor. You may use butcher paper on the floor to get a clearer pattern. If you strike the water, waves will be propagated. A rectangular piece of wood placed at various distances from the disturbance of the water will reflect the waves. More than one block of wood may be used to demonstrate various reflections and interferences.
2. When waves strike an object, they may either be absorbed, transmitted, or reflected.
   See activity for 1 above.
3. Various substances are opaque, translucent, or transparent.
   See activity for 1 above.
4. Light travels in straight lines from its source.
   See activity for 1 above.
5. Light travels in all directions from its source.
   See activity for 1.
6. Light is reflected at the same angle at which it strikes an object.
   See activity for 1.

7. Light can be broken into its spectrum by the use of a prism.
   Direct light from the sun or artificial source through a glass prism and observe the colors. The blue light represents short wave length energy. The red represents the longer wave length of light energy.
8. The colors of objects are those colors which they reflect.
   See activity for 7.
9. Convex lenses cause light rays to come together.
   Convex lens (flashlight lens)
10. Concave lenses cause light rays to spread apart.
11. Convex lenses invert the image.
    See activity for 9.
12. Light stimulates the rods and cones in the retina of the eye.
    Draw structure of the eye and label the parts.

F. Sound

1. Some sound cannot be heard by the human ear.
   Vibrations from 12 to 20,000 per second can be detected by some people.
2. The speed of sound is about 760 miles per hour.
   Seven hundred and sixty miles per hour or about 1,000 feet or 1/5 of a mile per second. Stand about 100 yards from the flat side of a two or three story building and observe your echo. Attempt to determine the time it takes to travel to the building and return to you (the number of seconds times 1,000 feet divided by two equals the distance one is from the building).
3. Objects approaching the speed of sound catch up with their own sound waves and pile up a sound barrier.
   The breaking of the sound barrier by some airplanes.

II. Life Science

A. The fundamental life processes are the same in all organisms.
   Draw the structure of the cell. Draw the structure of the cell which is in the process of splitting.
   Note that some animals hatch some eggs and some give birth to their young.
   The sperm from the male fertilizes the egg from the female. From this union the offspring develops.

B. Most living organisms carry on the common life processes; reproduction, growth, nutrition, excretion, respiration, irritability, movement, and adaptation.
   Refer to A above.

C. Reproduction is a fundamental biological process that provided both for the continuance of life on the earth by providing new individuals, and for the new models by which changes and types can occur in time.

Refer to A.

D. The simplest method of reproduction of organisms is the splitting of the body into two parts, each of which grows into a complete new individual.

Refer to A.

E. The reproductive elements and their union in fertilization are fundamentally the same in plants and animals.

Refer to A.

F. The energy which makes possible the activity of living things comes at first as light from the sun, is secured by green plants, and becomes available through the oxidation of food.

Green plants take energy from the sun and store it within themselves. When animals eat these plants, oxygen is combined with the digested food and part of the energy originally stored from the sun by the plants is liberated. This liberated energy is used for growth and repair of the tissues.

G. Oxidation furnishes the essential source of heat in the organisms.

Refer to F above.

H. Growth and repair are fundamental activities for all protoplasm.

Refer to F.

I. When building up of protoplasm is faster than the tearing down, growth occurs.

Refer to F.

J. Vitamins are necessary for good health.

Make a list of the vitamins and give the reasons why each is essential to growth and normal activity of the organs and some good sources of each vitamin.

K. All living things are continually engaged in a struggle with their environment.

Refer to J.

L. Most organisms succeed in a new environment provided it is similar to the old, and provided there are not too many natural enemies.

Consider the conditions for rabbits to grow and inhabit a certain area. Dogs and other animals eat rabbits. Rabbits eat vegetable matter. They need some source of water. They need some protection. The temperature needs to range between 30°F to 105°F.

M. Tolerance in range of temperature for life activities is very narrow as compared with the possible range of temperature.
Refer to L.

N. Population of any species depends upon its rate of reproduction, and growth, as compared with the total death rate from accident, enemies, and disease.
Refer to L.

O. All plants and animals, along with the climate and variations of weather, play active parts in helping to form and change the soil.
Using a terrarium show how earth worms break up large portions of soil and humus into small particles.
Soak a porus rock in water and put it into a deep freeze.
Nitrogen from the air is converted into useable nitrogen compounds by bacteria.
Luguminous plants have nodules which contain nitrogen fixation bacteria on their roots.
Put tap water into a cellophane bag (candy bags) and tie securely at the top. Submerge this bag in a container of sea or salt water and allow to set for a day or two. Taste the water in the cellophane bag. Note the salty taste. The salt water was more dense than the tap water and therefore defused through the cellophane bag by osmosis.

P. In a state of nature, all the higher forms of terrestrial life are dependent on the soil bacteria as a main source of their nitrogen supply.
Refer to O.

Q. Soil is formed through the disintegration and decomposition of rock particles and organic matter.
Refer to O.

R. Topsoil holds water and provides minerals necessary for the life of plants.
Refer to O.

S. Plants obtain minerals from soil moisture through the roots by osmosis.
Refer to O.

T. In the presence of sunlight, the chloroplasts of chlorophyll-bearing plants convert carbon dioxide and water into food, and release oxygen.
Place a block of green grass with soil intact in a flowerpot and place the pot in a dark room where every desirable condition for growth will be available except for sunlight or artificial light. The grass turns yellow and stops growing.

III. Earth Sciences

A. Geology

1. Igneous rocks are formed by the cooling of a hot molten mass.
   Show a diagram of the earth strata and indicate the most likely place to find igneous, metamorphic and sedimentary rock. Display examples of each kind of rock.
2. Throughout geologic history, magma has been penetrating the earth's crust and pouring out on the surface.
   Refer to one above.
3. Metamorphic rocks are formed by the changing of the characteristics of pre-existing rock by pressure, heat, or chemically active fluids.
   Refer to 1.
4. The weathering of rocks is caused either by chemical and/or mechanical processes.
   Turn a water hose on hard soil and notice the gradual eating away of the soil. Note here that it takes much longer for the erosion of rocks by running water.
5. Mass movements of rock may be rapid or gradual.
   Refer to 4.
6. Moving water erodes the earth's surface by direct lifting of particles and by solution, abrasion, and impact.
   Refer to 4.
7. Water flows underground due to the force of gravity.
   Using a large aquarium construct a replica of the earth's strata.
   Pour water into the depression and observe the location of the occurrence of springs.
8. Springs occur where the water table intersects the surface, if the source of water is above the intersection.
   Refer to 7.
9. Deltas result from deposition of transported materials as the velocity of water is decreased.
   Display a topographical map showing the conditions under which deltas are formed.
   Display a chart showing the geological formation present under a geyser.
   Refer back to experiment in 7 and 8.
10. The water in hot springs and geysers is heated by still warm igneous rocks.
    Refer to 9.
11. Groundwater is replenished by infiltrating precipitation and by streams.
    Refer to 9

12. Caves form when rock (usually limestone) is dissolved by groundwater.
    Recall experience in caves (Carlsbad, etc.)
    Carbon dioxide dissolves in water as it falls through the air and filters through the ground. As it passes over and through limestone, the limestone is changed chemically and becomes soluable. The water picks up the soluable material and carries it to the surface or to an existing cave where the soluable material gives off the CO2 and becomes insoluable again. Stalagmites and stalactites are formed from this insoluable material.
13. Most lakes are destroyed--after a period of time--by sedimentation or erosion.
    Discussion on soil erosion.
14. Lakes which have outlets tend to be fresh, whereas those lacking an outlet are saline.
    Refer to 13.
15. Sudden movements of the earth's crust usually form faults.
    A diagram of a fault on a geological map or from a textbook could be reproduced on a blackboard by some of the students. Earthquakes are sudden movements of the earth.

B. Astroscience

1. Our solar system is a member of the Milky Way Galaxy.
    Side view of the Milky Way Galaxy.
    Edge view of the Milky Way Galaxy.
    In the region of Andromeda is a fuzzy or hazy light as seen through a pair of binoculars or a telescope. This represents a group of stars outside of the Milky Way Galaxy. It is called the Great Nebula in Andromeda and is actually another galaxy. It is about two million light years away. A light year is the distance light travels within one year.
2. The solar system moves through an orbital path around the center of the galaxy.
    Refer to 1.
3. Stars are grouped into apparent constellations although they may vary greatly in distance from each other and from the earth.
    Refer to 1.
4. Distances in space are measured in light years.
    Refer to 1.
5. Planetary satellites have their planets as their gravitational centers.
    The gravitational center for the moon and the artificial satellites is the earth.

6. For every action there is an equal and opposite reaction (Newton's Third Law of Motion).
   Blow a balloon up and let it go as the air escapes.
   Suspend a test tube (at least 1" in diameter) by a thread. Insert a two hole stopper with two glass jets into the mouth of the test tube until it boils. As the steam escapes from the two jets, the tube should turn in a direction opposite that of the jet stream.
7. Rockets are not dependent upon atmospheric gases for combustion.
   The rocket carries its own source of oxygen to support the burning of the fuel. Gases are produced from this burning.
   When one stage of a multiple stage rocket burns, the second stage begins to burn and so forth.
   Radiation from the sun is slowed down as it enters the atmosphere. Some of the molecules of air absorb the radiation and become radioactive themselves. Most of the radiation is either absorbed or bounced off in another direction before it reaches sea level.
   Get a diagram of a rocket which has indicated the thrust, lift, and drag.
8. A rocket is controlled in space by ejecting spurts of gases.
   Refer to 7.
9. There are several types of rocket fuels.
   Refer to 7.
10. It is possible to achieve greater velocity and distance with multi-stage rockets than with single-stage rockets.
    Refer to 7.
11. The escape velocity and orbital velocity of a space vehicle vary with the astronomical body involved.
    Refer to 7.
12. The final velocity of a rocket is equal to the sum of the velocities of the stages.
    Refer to 7.
13. The earth's atmosphere serves as a shielding device against cosmic radiation.
    Refer to 7.
14. Four forces to be considered in flight are thrust, lift, drag, and gravity.
    Refer to 7.
15. Man encounters problems in space travel.
    Refer to 7.

C. Meteorology

1. The atmosphere consists of four distinct layers--the troposphere, stratosphere, ionosphere, and exosphere.
   Show by diagram where the different parts of the atmosphere exist.

There is a drop of about one inch in atmospheric pressure per each 1,000 feet up.

At about an altitude of 20,000 feet the temperature is about 18°F during the summer.

2. Generally, the temperature of the atmosphere decreases as altitude increases.

   Refer to 1.

3. Meteors are heated to incandescence by friction with the atmosphere.

   Falling stars are burning meteors. These meteors burn as they pass through the earth's atmosphere.

4. Small solar system bodies are unable to collect or retain atmospheres due to their low gravitational forces.

   Refer to 3.

D. Oceanography

1. Undersea earthquakes cause "Tsunamis."

   Discuss the direction of flow for the gulf stream and the resulting effects of this warm current on the climate in the Northern Hemisphere.

   Tidal waves are sometimes caused by earthquakes or volcanic erruptions which occur under the ocean.

2. Sea water moves by currents and by changes in sea level.

   Refer to 1.

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PHYSICAL EDUCATION

The physical education program for the migrant should be essentially the same from the standpoint of content and time as that required for students in the regular 9-month program described in the course descriptions in Bulletins 615 and 617.

The percentage of time to be provided in selected activities is shown in the following tabulation:

GRADE 1

. Appraisal of physical fitness	1 to 3% of total time
. Basic movements (Body mechanics, etc.)	15 to 25% " " "
. Games and Contests (Non-sport type)	20 to 30% " " "
. Playground Apparatus and Stunts	5 to 10% " " "
. Rhythmic Activities (singing games, etc.)	30 to 40% " " "

GRADE 2

. Appraisal of physical fitness	1 to 3% of total time
. Basic Movements (Body Mechanics)	15 to 25% " " "
. Games, contests, and relays (Non-sport type)	25 to 35% " " "
. Playground Apparatus and Stunts	5 to 10% " " "
. Rhythmic Activities (Fundamental Movements)	30 to 40% " " "

GRADE 3

. Appraisal of physical fitness	1 to 3% of total time
. Basic Movement (Body Mechanics)	10 to 20% " " "
. Games, Contests, and Relays (Non-sport type)	15 to 25% " " "
. Lead up Games for Sports	5 to 10% " " "
. Playground Apparatus and Stunts	5 to 10% " " "
. Rhythmic Activities	20 to 30% " " "
. Track and Field Activities	3 to 8% " " "

GRADE 4

. Appraisal of physical fitness	1 to 3% of total time
. Aquatics (if available)	5 to 15% " " "

Basic Movements	1 to 3%	of total time
Conditioning exercise (Daily)	5 to 20%	" " "
Games, Contests, and Relays	5 to 10%	" " "
Gymnastics	5 to 15%	" " "
Lead-up Games for Sports (soccer)	10 to 20%	" " "
Playground Apparatus and Stunts	8 to 15%	" " "
Recreational Games	3 to 8%	" " "
Rhythmic Activities	10 to 20%	" " "
Track and Field Activities	5 to 10%	" " "

GRADE 5

Appraisal of physical fitness	1 to 3%	of total time
Aquatics	5 to 15%	" " "
Basic Movements	1 to 3%	" " "
Conditioning Exercises (Daily)	10 to 25%	" " "
Games, Contests, and Relays (Non-sport	2 to 5%	" " "
Gymnastics	5 to 15%	" " "
Lead-up Games for Sports (Touch Football)	15 to 25%	" " "
Playground Apparatus and Stunts	8 to 15%	" " "
Rhythmic Activities	10 to 20%	" " "
Recreation Games	3 to 8%	" " "
Track and Field Activities	5 to 10%	" " "

GRADE 6*

Appraisal of physical fitness	1 to 3%	of total time
Aquatics	5 to 15%	" " "
Basic Movement	1 to 3%	" " "
Conditioning Exercises (Daily)	15 to 30%	" " "
Games, Contests and Relays (Non-sport type)	2 to 5%	" " "
Gymnastics	2 to 15%	" " "
Lead-up Games for Sports (Basketball)	15 to 25%	" " "
Playground Apparatus and Stunts	8 to 15%	" " "
Recreation Games	3 to 8%	" " "
Rhythmic Activities	10 to 20%	" " "
Track and Field Activities	5 to 15%	" " "

GRADES 7 & 8

See Bulletin 615, Texas Education Agency, 1961.

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*See Bulletin 617, pp. 199-208, for additional information on physical education.

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HEALTH EDUCATION

A supervised health program for the migrant child is equally as important as his academic studies. This program should follow the basic content described in Bulletins 615 and 617, modified to meet the special needs and interests of children who may be two or more years retarded educationally.

School health service personnel (doctors, nurses, dentists) and classroom teachers can by observation and screening programs determine special needs of these children.

Health instruction should be coordinated with the language arts program and with other school activities such as the school lunch program so that it may be as functional as possible.

Health instruction for Grades 1-6 is described as follows:

GRADE 1

- Healthful daily routines
  - getting ready for school
  - maintaining proper cleanliness
  - proper use of the toilet facilities
- Food and nutrition
  - learning to like healthful food
  - participating in the school lunch program
- Growth and development
  - measurement of height and weight
  - relationship between food and growth
- Prevention and control of illness and disease
  - colds
  - vaccination
- Safety and first aid
  - stopping nosebleed
  - first aid for simple emergencies
  - pedestrian safety procedures
- Adjustment to school life
  - controlling emotions
  - taking turns
- Care of teeth, eyes, ears, and feet
  - blowing nose correctly
  - reducing amount of candy and other sweets
- Elementary facts of reproduction
  - new brothers and sisters in the family
  - pets and their babies

GRADE 2

- Healthful daily routines
    - use of the toilet (use of toilet tissue, flushing the toilet, washing hands when finished)
    - dressing appropriately
- Food and nutrition
    - selecting a well-balanced meal
    - control of eating between meals
- Growth and development
    - getting sufficient rest
    - regulating amount of sleep
- Prevention and control of illness and disease
    - how disease is spread
    - causes of sore throats
    - immunization
- Safety and first aid
    - fundamentals of disaster safety
    - safety on the playground
- Adjustment to school life
    - being a member of a group
    - sharing and cooperation with others
- Care of teeth, eyes, ears, and feet
    - proper lighting when reading
    - protecting ears in cold weather
- Elementary facts of reproduction
    - pollenization in plants
    - kittens and puppies and other animals
- Getting acquainted with community health
    - the difference between purified and polluted water
    - visiting a dairy

GRADE 3

- Healthful daily routines
    - dressing according to the weather
    - good body mechanics in sitting and lying (posture)
- Food and nutrition
    - basic four food groups
    - table etiquette
    - improving eating habits
- Prevention and control of illness and disease
    - wholesome attitudes toward "health helpers" (school health services)
    - hygienic living practices (cleanliness and avoidance of exposure)

- Safety and first aid
  - playground safety
  - classroom and school bus safety
  - dangers of fire
- Adjustment to school life
  - making friends
  - assuming certain responsibilities
  - courtesy and thoughtfulness
  - learning to understand oneself and others
- Care of teeth, eyes, ears, and feet
  - brushing teeth correctly (general dental health)
  - avoiding excessive glare
  - wearing properly fitted socks and shoes
- Elementary facts of reproduction
  - reproduction in animals
  - reproduction in plants
- Growth and development
  - growth rates
  - maintaining proper weight for height
- Getting acquainted with community health
  - visits to water plant, sewage disposal plant, etc.
  - getting acquainted with the personnel promoting a healthful community

GRADE 4

- A balanced day of work, rest, and play
  - preparation for bed time
  - helping at home
- Nutrition
  - misuse of coffee, tea, sweetened soft drinks
  - good eating habits (trying new foods)
- The structure of the body and how it functions
  - parts of the human body and its functions
  - causes and factors in good and poor posture
- Habits of personal cleanliness and grooming
  - good habits of personal cleanliness
  - importance of good posture
- Mental, emotional, and social health
  - getting along with others
  - honesty
  - good sportsmanship
- Qualities as a member of the family
  - respect for parents
  - cooperation with and respect for others
- A healthy, safe, and clean community
  - garbage disposal
  - rabies
  - safety hazards in the community

GRADE 5

- A balanced day of work, rest, and play
  - learning to relax
  - rest, play, exercise, and work as basic body needs
- Nutrition
  - basic daily food requirements
  - overweight and underweight
  - participation in planning and preparation of simple family meals
- The structure of the body and how it functions
  - individual differences in height and weight
  - digestion
- Habits of personal cleanliness and grooming
  - care of skin, hair, and fingernails
  - practicing good posture
- Mental, emotional, and social health
  - respecting rights of others
  - self-confidence
  - controlling anger
- Qualities as a member of the family
  - assuming responsibility in the home
  - self-discipline
- A healthy, safe, and clean community
  - water purification
  - reacquaintance with doctors, nurses, dentists, and other health workers

GRADE 6*

- A balanced day of work, rest, and play
  - attitudes toward school work and school chores
  - time schedules and planning ahead
- Nutrition
  - choosing food wisely; regular meal times
  - nutrients
  - deficiency diseases
- The structure of the body and how it functions
  - functions of parts of the human body
  - blood structure and circulation
  - digestion
- Habits of personal cleanliness and grooming
  - selection and care of suitable clothing
  - general body cleanliness
  - importance of good posture

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*See Bulletin 617, pp. 167-177, for additional information on health education.

- Mental, emotional, and social health
    - understanding and making allowances for the physically handicapped, such as the epileptic, the crippled child, those with speech defect, and the mentally retarded
    - day dreaming
    - courage; character development
    - being a good citizen
- Qualities as a member of the family
    - pride in and care of personal belongings (clothes, toys)
- A healthy, safe, and clean community
    - inspections of food establishments and food handlers
    - functions of local health organizations
    - sewage treatment

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SAFETY EDUCATION

Since migrant children are continuously subject to the hazards of travel, safety education is a very important part of the 6-month program. The content should follow the course descriptions in Bulletin 615 and 617 as closely as possible, modified only to be made more functional for these children.

The school should organize and provide for:

- Articulation with the overall safety program of the school
- Supervision of children in safety activities to ensure the development of desirable habits and skills
- Participation of children and school staff in supervised drills for emergencies such as fire, explosion, tornado, and civil defense
- Participation in a plan of reporting school accidents
- Cooperation with community agencies.

GRADE 1

- Pedestrian safety
  - safe route to and from school
  - crossing the street
  - general pedestrian rules
- Traffic safety
  - tricycles
  - traffic lights and signs
  - hand signals
  - safety patrol (policemen and traffic officers)
  - traffic laws
- Indoor safety (home and school)
  - general household and school safety rules
  - proper use of matches
  - hazards of plastic bags
- Outdoor safety
  - unauthorized play areas
  - tornadoes and natural disasters
  - civil defense measures
  - safety precautions with animals
  - hazards of icy streets and sidewalks
  - school bus
  - hazards of discarded refrigerators

GRADE 2

- Pedestrian safety
  - wearing light colored clothing when walking after dark
  - facing traffic when walking in the street
  - general pedestrian safety rules
- Traffic safety
  - riding and caring for bicycles
  - using crosswalks and intersections for crossing
  - one-way streets
- Indoor safety (home and school)
  - poisons
  - bathroom hazards (slippery bathtub; electric shock)
  - electrical equipment
- Outdoor safety
  - railroad dangers
  - electrical storms, and other bad weather conditions
  - swimming and wading
  - fishing and boating
  - hazards of fireworks

GRADE 3

- Pedestrian safety

  A review of safety practices learned in the first two grades
- Indoor safety (home and school)
  - flammable liquids
  - hazards at Christmas (faulty wiring; fire danger of rubbish piles and dry trees)
  - using household appliances safely
  - heating equipment (oil stoves)
- Traffic safety
  - school bus safety
  - loading and unloading procedures for all vehicles
- Outdoor safety
  - railroad trespassing
  - avoiding hazardous areas (rifle ranges; electrical power installations)
  - camping and hiking
  - safety with strange dogs

GRADE 4

- Pedestrian safety

  A review of safety practices learned in the first three grades
- Indoor safety (home and school)
  - danger of plastic bags (review)
  - care and use of home workshop tools
  - kitchen and bathroom hazards
  - general household safety (review)
- Traffic safety
  - riding and caring for bicycles (review)
  - school bus safety (review)
- Outdoor safety
  - roller skating
  - hazards of motor boats
  - hazardous weather conditions (tornado, hurricane)
  - safety with guns
  - poisonous plants and snakes

GRADE 5

- Pedestrian safety
  - special problems on pedestrian safety
  - precautions for walking after dark (review)
- Traffic safety
  - local traffic regulations
  - planning an accident-free year
- Indoor safety (home and school)
  - falls
  - insecticides and flammable liquids
  - hazards of stairs (tripping, stepping on toys)
  - heating equipment (oil stoves)
- Outdoor safety
  - safety rules for swimmers and divers
  - general water safety
  - hazardous weather conditions (review)
  - summer vacation safety

GRADE 6*

- Pedestrian safety
  - proper use of sidewalks
  - winter walking
  - hikes (review)
- Traffic safety
  - proper equipment for bicycle safety
  - locking doors of cars when riding
  - safety belts
- Outdoor safety
  - dressing warmly for winter weather
  - dusting of insecticides
  - camping hazards
  - guns and target practice
  - avoiding strange animals
  - safety rules for swimmers and divers (review)
- Indoor safety (home and school)
  - hazards of electrical shock
  - burns from iron, toaster, stove
  - care and maintenance of tools and the home workshop
  - hazards of food and drink (poisons; contaminated or spoiled foods)

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*See Bulletin 617, pp. 209-215, for additional information on safety education.

MUSIC

It is suggested that the emphasis in music for the 6-month school be on singing to provide a change in pace in the child's daily schedule, and to reinforce his language arts skills.

Songs used may be those available in state-adopted collections as well as any supplementary books containing appropriate vocabulary. Songs of the Spanish culture are in the current state-adopted materials and in some supplementary materials, which contain both Spanish and English texts.

Basic music theory may be introduced at about grade 3, emphasizing the reading of music notation and introducing key and time signatures.

Singing in unison should continue throughout the program, but no later than grade 5 two-part singing should be introduced. At grade 7 three-part singing is to be introduced.

At all levels children will also be given a needed change of pace by the use of rhythm instruments such as maracas, clavas, and guidos.

It would seem desirable to make instrumental music available at grade 7 and 8 for those children who have remained in a continuous music program.

Upon completion of grade 8 a child should be able to read with facility the music notation and the vocabulary of song books he will use in church or civic activities in which singing is a part.

ART

The art program in the migratory school is for all children in correlation with the language arts and other subjects. Art allows children to express their ideas and feelings, to develop a sense of order in communicating to others, and to educate their emotions. A varied and balanced program of grade-by-grade activities is to be planned by the teacher. Because of the developmental aspects of the art program, many of the activities introduced at one grade level will be reflected in subsequent years on a more advanced level. It is important to have continuous repetition of experiences with variation to promote growth.

Subject matter for art activities is based largely on children's own experiences. Motivation will be gained by discussing familiar places and things, reading and listening to stories, going on field trips, and looking at films and pictures. It is important for both teacher and pupils to develop a good sequence of procedure.

SEQUENCE OF PROCEDURE

1. Motivating--building a background of experience with a subject
2. Using Materials--allowing a child to express his ideas and feelings
3. Guiding--using words of encouragement
4. Evaluating--during time lesson is in progress or near the end of the period. Child may be allowed to show his work to the class and tell something about it. This helps to develop his ability to interpret his ideas in words. Creative work must be encouraged and viewed in terms of how well the child has carried out his purpose in relation to his level of maturity. The evaluation is very important.

FIRST GRADE ART

1. Two-Dimensional Art Activities
   - Use of tempera paint in a variety of ways
   - Use of construction paper for tearing, cutting, and pasting
   - Use of crayon and paints for illustration
   - Work in groups to produce large paintings, murals of cut paper, tempera paint, crayons, or a combination of materials
   - Paint with sticks or gadgets to make all-over and border designs
   - Use finger paints - using arm, hand and finger movement

2. Three-Dimensional Art Activities
   Use clay and construction paper in a variety of ways
   Build objects with cardboard or wooden boxes
   Make masks and holiday objects for special days from cut paper, paper sacks, or paper plates; decorate them
   Collect odds and ends of scrap materials for making interesting forms
   Use cloth, yarn and large needles to sew simple objects for school projects or gifts

3. Art Appreciation Activities
   Observe beauty of nature
   Collect articles of various texture to touch, see, and talk about
   Arrange objects and flowers for enjoyment and beauty
   Learn to care for personal belongings
   Participate in projects for beautifying the classroom
   Plan exhibits of class work

SECOND GRADE ART

As the child moves into his second year of school life he will have greater opportunities to expand his awareness and understanding of the world about him through art. Illustrations and construction may be related to areas of school work such as language arts, social studies, science and music. All experiences provided in grade 1 are continued and expanded.

1. Two-Dimensional Art Activities
   Those used in grade 1 are expanded providing increased number of purposes, skills and understandings

2. Three-Dimensional Art Activities
   These are expanded the same way the Two-Dimensional Activities were expanded

3. Art Appreciation Activities
   These are continued with the added study of a few good paintings by famous artists

THIRD GRADE ART

In grade 3, the art curriculum makes use of children's natural love for drawing, painting, and constructing to add to skills and concepts developed in grades 1 and 2. The art activities in this grade will develop through experiences at home, school and community. The study of design is continued by the use of music expressed in line, form and color.

1. Two-Dimensional Art Activities

   Continue the use of crayons, tempera paint, colored chalk, and clay with added skills and concepts. Use the wide and sharp strokes with crayons. Use larger brushes and larger paper for tempera. Use colored chalk on wet or dry paper. Learn to mix water colors and to handle the brush

   After exploring and experimenting with the above materials, draw or paint pictures to illustrate various subjects such as

   aspects of the neighborhood
   school activities
   out-of-door pictures
   people in action
   original poems and stories

   Continue use of construction paper in a variety of ways and make cut-out forms,fruits, flowers, insects, and other studies

2. Three-Dimensional Art Activities

   Continue use of clay. After experimenting and exploring, shape into objects and forms

   Continue use of construction paper. After experimenting and exploring make sculptured objects, people and animals--real or imaginary

   Make masks for plays and holidays. Point and decorate with variety of material

   Make art objects for Christmas and other holidays

   Construct dioramas or shadow boxes for illustrations in social studies, science, and other subjects

3. Art Appreciation Activities

   Plan, arrange and discuss displays of class work

   Show motion and still pictures, filmstrips and slides to become better acquainted with masterpieces of art

   Make a touch table with objects of various textures--rough, soft, etc.

FOURTH GRADE ART

The art program in the intermediate grades continues to be built around many of the same activities introduced in the primary grades. The pupils' knowledge and understanding of art forms are extended through the introduction of new materials and techniques. Pupils also become more adept at using familiar materials and techniques.

Two- and Three-Dimensional Art Activities in grade 4 are a continuation of the same activities in the primary grades with added materials and techniques.

Art appreciation activities are an expanded continuation of those in grades 1-3, plus collections of art reproductions and other types of art, such as examples of weaving, printing and sculpture. Field trips to find beauty in nature are conducted. Visits are made to places of interest to see architecture, people, and things happening.

FIFTH GRADE ART

The art program in grade 5 continues to provide balance among a wide variety of activities, but problems in design and in two- and three-dimensional activities begin to be assigned on the basis of pupil needs and interests.

SIXTH GRADE ART

The art program in grade 6 is a culmination of all the experiences and activities to which children have been introduced in the elementary school. Sixth grade pupils will be expected to reflect a greater degree of growth, maturity, and skill in all phases of the art program than in previous grades. While work will continue in a wide variety of media, children will engage in more specialized projects related to individual interests and needs.

1. Two- and Three-Dimensional Art Activities
   Continue to develop skills in use of crayons, tempera paint, clay, water colors and apply in illustration
   Sketch or paint out-door pictures
   Illustrate games, rhythms, stunts, etc.
   Introduce weaving
   Construct simple electric panel boards, weather vanes, etc. to correlate with science

2. Art Appreciation Activities
   Discuss the appearance of the classroom and suggest ways to improve it
   Study paintings and masterpieces and learn about the artists
   Invite an artist or craftsman in the community to give a talk or demonstration to the class

SEVENTH AND EIGHTH GRADE ART

Continue the grade 6 program with increased skills and concepts.

INDUSTRIAL ARTS GENERAL SHOP

Industrial Arts General Shop is a four-year sequence of courses which includes basic areas of industrial shopwork: power mechanics, metalworking, woodworking, and electricity. Grade placement of topics to be covered provides for increasing depth of study as the pupil progresses and for appropriate repetition.

For instance, the power mechanics unit in the fifth grade course includes an introduction to principles of the internal combustion engine via work with small air-cooled units used on lawnmowers and scooters. These principles are studied again in grade eight in higher level repair and maintenance work with multi-cylinder engines. Each of the areas covered provides for repetition to strengthen skills and deepen understanding of principles.

Achievements of pupils who have completed the four-year sequence of courses can be expected to approximate those of more mature high school students who have completed a two-year high school sequence. The following skills and knowledge may be expected:

- Pupils use common hand tools and construction materials with a measure of skill.
- They use the basic technical vocabulary of each area studied in speaking, reading, and writing.
- They perform routine maintenance on simple machines--automobile, simple home appliances...
- They exhibit a knowledge of elementary construction methods: wood joinery, fasteners, finishes; metal fasteners, forming methods, finishes...
- They understand elementary principles of electricity: heating, lighting, and power.
- They may have developed new insights regarding the scope of industrial occupations and their own life work.

The four-year sequence of courses includes the following content:

Grade V, Woodworking and Power Mechanics

- Shop organization
- Safety--hand tools
- Reading and interpreting shop drawings, and blueprints
- Following teacher-prepared written instructions
- Measuring with a rule
- Using common hand woodworking tools: claw hammer, crosscut, back, and coping saws; block and jack planes
- Assembling with glue and nails, sandpapering
- Finishing wood with brush
- Disassembling small engines, inspecting parts, reassembling, testing, making carburetor adjustments
- Using box- and open-end wrenches, screw drivers, pliers
- Basic technical vocabulary in woodworking and power mechanics
- Basic wood joinery: lap, butt, dado, rabbet
- Principles of two- and four-stroke cycle engines

Grade VI, Woodworking and Metalworking

New woodworking content:

- Shop management; purchasing materials
- Safety--finishes and other flammable materials
- Making freehand sketches of elementary projects

- Writing an order of procedure for work to be done
- Working to a deadline
- Constructing projects that require multiple operations with several tools

Metalworking content:

- Using common hand tools: files, punches, hand twist drill, ball peen hammer, rivet set, metal shears, hack saw, chisel, combination square
- Performing elementary bench and sheet metal operations: filing, drilling, riveting, cutting with shears and chisel, sawing, bending
- Making measurements and layout with rule, square, calipers, and scriber
- Reading shop blueprints and sketches
- Basic technical vocabulary in metalworking

Grade VII, Power Mechanics and Metalworking

New power mechanics content:

- Fuels and lubricants
- Principles of carburetion
- Principles of elementary machine elements: cranks, pulleys, spur and bevel gears, levers, shafts, bearings, clutches, valves
- Multi-cylinder engines: the power cycle, disassembly and reassembly

New metalworking content:

- Soldering (soft)
- Heat forming, forging, simple heat treating and annealing
- Using floor or bench drill press

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- Using power grinder and buffer
- Making shop sketches and writing orders of procedure for work; writing elementary specifications for materials
- Using hand taps and dies
- Using universal tube and strap bender, slip rolls, bar folder, squaring shears

Grade VIII, Electricity, Power Mechanics, Metalworking

Electricity content:

- Sources of electricity, chemical, mechanical
- A.C. and D.C.
- Conductors, insulators, switches
- Motor and generator principles
- Simple series and parallel circuits: lamps, cells, resistances
- Ohm's law
- Reading meters; measuring current, voltage, and resistance in D.C. circuits
- Applications in lighting, heating, power
- The automobile ignition and low voltage electrical systems

New power mechanics content:

- Test equipment and simple instrumentation: gaging temperature, ignition settings, carburetion
- Performing routine maintenance: lubrication, tire repair, cleaning
- Performing simple repair jobs: cleaning and gaging spark plugs, adjusting ignition and valve tappets, testing and repairing generator, starter, and hydraulic systems
- Design of the automobile: chassis, running gear, power train, body and trim

OCCUPATIONAL TRAINING IN AGRICULTURE*

The objectives for occupational training in agriculture for migrant students are to provide necessary knowledge and skills needed for employment in available jobs in their home-base areas, in surrounding areas, or in the State.

These objectives and programs should be planned primarily for students with low basic educational achievement and no previous employment experience in the following occupations:

1. Fertilizer service company worker
2. Insecticide service company worker
3. Cotton gin and oil mill worker
4. Dairy farmer and plant employee
5. Farm machinery operator
6. Farm machinery repairman
7. Farm machinery company employee
8. Fruit and vegetable grader
9. Fruit and vegetable harvester
10. Fruit and vegetable packer
11. Fruit and vegetable processor
12. Greenhouse and nursery worker
13. Forestry worker
14. Grain elevator worker
15. Irrigator
16. Herdsman
17. Livestock rancher worker
18. Meat processing plant worker
19. Poultry workers--graders, packers, processors
20. Sheep shearers

Instruction for employment in agricultural occupations should be provided for students in grades seven and eight. Subjects covered would provide for increased proficiency through continued experiences to strengthen appropriate skills and a broader understanding of the principles of agriculture.

Course outlines should be developed for areas of instruction that would provide basic knowledge and skills essential for employment upon completion of the two-year course offered in seventh and eighth grades and entrance to the regular vocational agriculture program offered in high schools.

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*When local schools wish to develop a program in Occupational Training in Agriculture, the Texas Education Agency will provide consultants to work with individual schools to help provide a program suitable for the area concerned.

HOMEMAKING EDUCATION

Homemaking education provides opportunities for the migrant child to develop those understandings and abilities which will enable him to attain effective individual and family life. In addition, youth who have basic understandings and skills in homemaking education may be prepared for home-related wage-earning occupations. While all subject-matter areas contribute in preparing individuals for satisfying personal and family living and the beginning of a vocational competence, homemaking education has the unique role of focusing directly on the individual in a family unit.

The school, home and community should be considered as the laboratories in which instruction takes place. Home visitation provides an important means for identifying needs, selecting and planning experiences to meet the needs of youth as they function in families.

Homemaking education is a four-year sequence of courses for youth thirteen years of age and over enrolled in the non-graded schools for children of migratory agricultural workers. Placement in the four levels of homemaking education will be determined by the maturity, ability, and needs of the individual pupil.

The instructional program provides learning experiences for the development of understandings and skills in:

1. Improving housing conditions and providing attainable home conveniences.

2. Preparing nutritious meals for the family considering income, customs, and desirable food practices.

3. Improving practices in the care and guidance of young children.

4. Improving the health of family members through sanitation and personal hygiene.

5. Selecting, constructing, and renovating clothing for family members.

6. Laundering and caring for clothing and other household articles.

7. Appreciating family living patterns, customs, and traditions and assuming responsibilities which contribute to satisfying family living.

8. Caring for the sick and injured in the home.

9. Planning for better use of the family income.

10. Organizing and manging time, energy, and money.

11. Preparing for home-related wage-earning occupations such as baby-sitting, laundering, ironing, mending, food service, and working in child care centers.

The following suggested learning experiences and activities are given as a basis for helping teachers plan the instructional program most needed and appropriate for youth. As the program develops, the teacher will discover additional experiences necessary to meet the needs of the youth. Particular attention should be given to the development of language skills--reading, spelling, writing, vocabulary building, and learning to follow written and oral directions and instructions.

Housing and Home Equipment

1. Determine how the basic family needs are cared for in the home.

2. Consider the relationship of clean, comfortable, and attractive home surroundings to the health and well-being of the family.

3. Learn how to clean and organize living space to best meet the basic needs of the family.

4. Learn how to make some home repairs such as mending screens, papering and painting walls, repairing and reconditioning furniture.

5. Make or improvise furnishings to add to the comfort and convenience of home such as shelves for food and dishes, dressing tables, storage boxes or shelves for clothing and household articles, chairs or benches, portable folding screen, or portable table.

6. Find ways of providing sleeping space, beds, and bedding.

7. Find ways to beautify the home through use of own art work, framing cut-out pictures, making inexpensive curtains for windows and shelves.

8. Plant and care for pot plants and small flower garden.

9. Learn how to care for home, including cleaning, dusting, organization of work, and use and care of home equipment.

10. Make a safety check list for a home: elimination of fire hazards, broken steps or floors, exposed wiring, safe use of open fires, stoves, boiling water, poisons, and insecticides.

11. Learn ways to control and eliminate insects.

12. Find ways of providing for family and individual recreation.

Family Food and Nutrition

1. Find out what constitutes an adequate diet.

2. Analyze the relationship between how one looks and feels to what one eats.

3. Find how the needs, interests, customs, and experiences of families affect their eating habits.

4. Learn the "Basic 4" food groups and find ways of supplementing present food patterns to include the essential food groups.

5. Plan and prepare simple low-cost meals making use of native foods.

6. Find ways of obtaining and using more vegetables, fruits, and milk such as securing vegetables and fruits unsuitable for shipping from packing sheds, using dried and canned milk, and using foods in season.

7. Prepare in different ways foods commonly eaten by families supplementing them with foods needed for an adequate diet, and make use of native utensils such as clay pottery.

8. Find ways of storing and caring for food in the home when there is little storage space or refrigeration.

9. Figure costs of meals prepared.

10. Find ways of extending the food dollar by studying labels, size of packages, containers, and foods in season.

11. Study and practice table manners and show how observance of good manners adds to the enjoyment of food and meal time.

12. Make eating in the school lunch room a means of developing food habits and table manners.

13. Prepare and serve food for bed patients, invalids, and family members on special diets.

14. Experiment with simple methods of food preservation such as water bath canning of fruits and tomatoes and making jams and jellies.

15. Determine and practice safety rules in preparing, handling, and storing food and in the use of equipment.

16. Examine superstitions in relation to food and health and find ways of overcoming superstitions.

Child Care and Guidance

1. Learn some of the common characteristics of children through study and observation of small children.

2. Determine how children form good habits and practice helping children in habit formation.

3. Learn how food affects the growth of a child.

4. Determine the importance of cleanliness and sanitation in feeding, clothing, and caring for babies and young children.

5. Experiment with ways of sterilizing bottles and eating utensils.

6. Experiment with ways of making foods the family eats acceptable and appropriate for babies and small children.

7. Plan, prepare, and serve food for children.

8. Learn the relationship of sleep and rest to the health and well-being of children.

9. Find ways of providing cribs, beds, and bed covers for babies and small children.

10. Make a simple crib, pad, and covers.

11. Learn to select clothing for babies and small children.

12. Plan a layette and make some garments for a baby.

13. Make or remodel a garment for a small child.

14. Find out how children learn through play.

15. Provide some improvised, inexpensive play equipment.

16. Learn to tell stories, sing songs, and direct games for small children.

17. Determine responsibilities one should assume in caring for children at home or when baby-sitting for other children.

18. Observe children in the primary grades at school and take advantage of assisting with some of their activities.

19. Study the importance of maternal care and health.

20. Examine superstitions relating to babies and small children and find ways of overcoming these superstitions.

21. Determine safety precautions to be observed in caring for children.

Personal and Family Hygiene and Home Sanitation

1. Consider the relationship of personal hygiene and sanitation to health and well-being.

2. Make and follow a plan to improve personal grooming and hygiene.

3. Experiment with some good grooming techniques such as shampooing and arranging hair, treatments for dandruff and scalp irritations, cleaning brushes and combs, care of nails, and applying make-up.

4. Prepare inexpensive deodorants, tooth powder, hand lotions, and shampoos.

5. Consider the importance of regular bathing and find ways of providing space and facilities for bathing.

6. Learn how to care for and clean toilets and bathing facilities.

7. Find ways for safe disposal of waste such as dish and bath water, garbage, and sanitary toilets.

8. Learn safe methods of exterminating and controlling mosquitoes, flies, mice, roaches, and other pests.

9. Learn how to keep food and water clean and safe.

10. Investigate services available in the community for the protection of health and the prevention of disease.

11. Learn the importance of protecting personal family health through vaccinations, immunizations, chest X-rays, and medical, eye, and dental examinations.

12. Examine superstitions relating to personal hygiene and sanitation and find ways for overcoming these superstitions.

Clothing Selection, Construction, and Care

1. Consider the relationship of clothing to the health and well-being of oneself and family members.
2. Investigate and determine what clothes and accessories are appropriate and suitable for school, work, play, and other activities.
3. Study and practice using and caring for a sewing machine and other equipment.
4. Determine safety rules to be observed in use of sewing machines.
5. Have a clothing repair clinic and learn how to mend or darn articles of clothing, replace buttons, fasteners, elastic, straps, and shorten or lengthen hems.
6. Examine samples of textiles and fabrics to determine quality of materials, color combinations, and designs best suited for the use intended and according to money available.
7. Plan and construct a simple garment or article for the home without the use of a pattern.
8. Learn how to take measurements for patterns or for clothes to be bought.
9. Observe demonstrations on fitting, altering, and use of a pattern.
10. Select pattern and material for use in constructing a simple garment.
11. Practice good work habits and techniques while constructing garment.
12. Evaluate finished garment to determine workmanship, appropriateness, cost, and to determine next projects needed to increase sewing skills.
13. Consider the selection of clothing for other family members.
14. Determine when it is better to make clothes and when to buy ready-made clothing.
15. Learn how to care for various types of clothing.

16. Provide inexpensive storage facilities for clothing.

Laundering of Clothing and Household Articles

1. Consider the necessity of good laundering and cleaning of clothes and household articles for good health, sanitation, and well-being, as well as for wear and usefulness.
2. Determine supplies necessary for laundering.
3. Compare the effect of soaps and detergents, bleaches, blueing, and starches on different types of materials.
4. Determine safety precautions to be observed in use of laundry equipment and supplies.
5. Learn how to sort clothes for hand or machine washing.
6. Practice washing clothes by hand and in a machine.
7. Practice ironing various types of clothing and household articles.
8. Learn how to care for iron and ironing board cover.
9. Find ways to store clothing and household articles after laundering and ironing.
10. Determine advantages and disadvantages of home dry cleaning, and the precautions necessary in use of cleaning fluids.
11. Experiment with removing stains and spots.

Family Living

1. Consider what families do for individual members.
2. Determine what contributions individual members can make to the family unit.
3. Study family patterns, traditions, and customs for better understanding and appreciation of the family unit and expectations held by the family for individual members.
4. Analyze the jobs necessary for the smooth and harmonious operation of a home.

5. Determine how sharing in the work and responsibilities makes for happier family life.

6. Determine why conflict and misunderstandings sometimes occur in families.

7. Decide on ways conflicts and misunderstandings can be avoided.

8. Plan ways in which the family can have recreation at home.

9. Provide space and inexpensive equipment for recreation.

10. Assume responsibility in directing play and recreation for young family members.

11. Determine responsibilities families have to the community and the services and opportunities the community offers to families.

12. Encourage family members to participate in school and community programs and activities.

Home Care of the Sick and Injured

1. Become familiar with some of the common symptoms of illness.

2. Learn what to do when these symptoms occur, when to use home remedies, and when to consult a doctor.

3. Learn how contagious diseases are spread and how to prevent their spread.

4. Determine ways of caring for the sick at home to provide for rest, sleep, privacy, and comfort.

5. Make some improvised equipment for caring for the sick: back rests, disposal bags, bed table, arm and leg rests, or cradles.

6. Learn how to make and change a bed with a patient in it.

7. Determine supplies and equipment needed in a home medicine cabinet or first-aid kit.

8. Make and equip a home medicine cabinet.

9. Practice making and applying bandages.

10. Learn how to sterilize bandages, eating utensils, and other articles used by the sick.

11. Practice taking temperature, pulse, and respiration rates.

12. Learn how to care for cuts, bruises, and minor accidents.

13. Find ways to eliminate and prevent skin irritations and infections.

14. Learn what to do in emergencies.

15. Examine superstitions relating to illness and diseases and find ways for overcoming these superstitions.

Management of Money, Time, and Energy

1. Determine responsibilities each family member has for the wise use of the family income.

2. Recognize the importance of definite plans for purchasing food, clothing, and similar necessities in order to have a better balanced plan of living.

3. Investigate ways in which families can get best quality for the amount of money spent for food, clothing, shelter, and other needs.

4. Take advantage of opportunities for earning money and contributing to the family income.

5. Determine how the family income can be extended through care of clothing, equipment, and furnishings to prolong wear and use.

6. Consider the importance of planning for spending of money so all cash available will not be spent at one time, leaving none for necessities and emergencies.

7. Investigate types of credit, loans, and installment buying and determine when and how these can or should be used.

8. Determine why it is important to save money and how systematic plans for saving may be developed.

9. Find ways in which time and energy can be used to best advantage in caring for family needs and responsibilities.

10. Experiment with various methods of cleaning house, washing dishes, making beds, washing and ironing, preparing food, and sewing to conserve time and energy.

11. Make and follow a work and time schedule for home responsibilities in order to have time and energy for school and home study.

12. Determine the value and importance of planning for regular hours for eating, rest, bathing, etc. when the family has limited space and facilities.

Preparing for Home-Related Wage-Earning Occupations

1. Investigate the home-related wage-earning opportunities available in the community such as baby-sitting, laundering, ironing, mending, house cleaning, and working in child care centers.

2. Decide on personal qualities and abilities which make a person employable.

3. Make and follow a plan for developing these qualities and abilities.

4. Decide on type of wage-earning job for which one is best suited.

5. Decide on learnings and skills needed for the job and work toward developing these skills.

6. Practice applying for a job both in person and writing.

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RECORD OF TEACHING PLANS, METHODS, TEACHING AIDS, AND ACCOMPLISHMENTS

The recommendation was submitted by the committee on "Other Subjects" that teachers in the pilot study be asked to keep a record of lesson plans used during the school year of 1963-64 which could be used as a basis for curriculum revision.

In accordance with this recommendation, the attached form is given as a suggestion for recording information which would be of help in determining important and pertinent subject matter and activities for the four levels of homemaking education, effective methods and techniques, and valuable teaching aids.

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*Additional references for books, films, filmstrips, and other aids will be found in these books. Excellent free and inexpensive teaching aids are available from commercial companies.

RECORD OF TEACHING PLANS, METHODS, TEACHING AIDS, AND ACCOMPLISHMENTS

Name of School ____________________ Name of Teacher ____________________

Level of Homemaking ____________________ Area of Homemaking ____________________

Learning Experiences and Activities	Methods and Techniques Used for Development of Experiences and Activities	Teaching Aids Found Most Helpful (Books, bulletins, films, filmstrips, and illustrative materials. Give name, address, publisher, and cost.)	Specific Evidence of Change in Individual Homes

OCCUPATIONAL TRAINING IN DISTRIBUTION*

Occupational training in distribution is a two-year course which involves a combination of (1) instruction in the classroom related to the occupation the student is preparing for, and (2) practical experience on the job.

The classroom instruction for occupational training in distribution includes: (1) the providing of training resulting in the acquiring of technical skills and knowledge directly related to the work experience of the students (2) a background of general information necessary to advance in the broad field of distribution (3) and the creating of desirable attitudes in the student towards work, school, and society.

The practical phase of this program will be the placing of the student in an actual work situation to acquire the skill and knowledge necessary for his chosen occupation. This enables the student to relate the classroom instruction to the on-the-job phase of his training. The work schedule should include not less than 15 hours of employment per week.

The distributive occupations selected for students in this class should be appropriate for students with low basic educational achievement. Some examples of appropriate distributive occupations are:

.. retail stockkeeping department helper
.. grocery produce department helper
.. restaurant bus boy
.. service station helper
.. store janitorial service
.. wholesale warehouse helper
.. assistant to driver salesman
.. automobile parts department helper
.. store maintenance helper

The objectives of occupational training in distribution are:

... Acquaint the student with practical experience in an actual work situation
... Provide in classroom instruction information based on the specific and general knowledge necessary to a particular occupation
... Motivate the student towards interest in self-improvement and the desire to qualify himself for permanent employment as compared with seasonal work
... Interest the student in preparing himself for earning a livelihood and becoming a permanent resident of a community

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*When local schools wish to develop a program in Occupational Training in Distribution, the Texas Education Agency will provide consultants to work with individual schools to help provide a program suitable for the area concerned.

OCCUPATIONAL TRAINING IN INDUSTRY*

Occupational training in industry is a two-year course including: (1) instruction in the classroom directly related to the occupation the student will be learning and (2) practical experience on the job.

The objectives of related classroom instruction for occupational training in industry are: (1) to provide instruction directly related to the daily work experiences of students, (2) to provide a background of basic and auxiliary information that will enable the student-learner to advance in his chosen occupations, (3) to create desirable attitudes on the part of the student toward work, school, and society.

The practical phase of this program will be to place the student in an actual work situation to gain the knowledge and skills of the occupation he is learning. This will enable the student to apply the related classroom instruction to a realistic, practical work situation. The work schedule will be determined by the number of hours available in the daily classroom schedule.

The occupations selected for students enrolled in this class should be primarily for students with low basic educational achievement who are of the age level to profit from the training offered. Some examples of trades or occupations appropriate are:

.. automobile mechanics helper
.. automobile body repairman helper
.. building maintenance man
.. household employee
.. sewing machine operator
.. laundry worker
.. assembly line worker
.. welder helper
.. construction worker
.. municipal service worker

The objectives of occupational training in industries are:

... Acquaint the student with practical experience in an actual work situation
... Offer instructional materials in specific occupations to acquaint the students with the basic knowledge of the occupation
... Acquaint the student with the advantage of permanent employment in an occupation rather than a seasonal work situation
... Acquaint the student with the concept of earning a livelihood and becoming a permanent resident of a community

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*When local schools wish to develop a program in Occupational Training in Industry, the Texas Education Agency will provide consultants to work with individual schools to help provide a program suitable for the area concerned.

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